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ABSTRACT

This report describes the cost of nonprofit undergraduate collegiate education, how that cost has grown throughout the 1980s, and reasons for increases in college costs. The study analyzed multiple data sources to determine that college tuition growth has outpaced general price inflation since about 1980, but the American public believes that the cost of attending college is much higher than it actually is. Beginning in 1980, the proportion of family income needed to pay tuition increased. Between fall 1980 and fall 1987, the amount of student financial aid provided by all sources increased 7% faster than inflation, and students increased their reliance on loans. Academic expenditures did not increase as rapidly as overall expenditures, while administrative expenditures went up much faster. Between fall 1975 and fall 1985 faculty salaries increased by 87% in real dollars. Differing rates of enrollment growth greatly impacted per-student expenditures. Between 1975 and 1985, tuition and fee revenues made up a larger proportion of overall revenues. Analysis of the 100 most expensive private institutions and a small number of prestigious public institutions found that each type spent, on average, more than twice as much money per student than the average institution in its respective sector. Includes 72 references. (JDD)

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TRENDS IN INSTITUTIONAL COSTS

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EXECUTIVE SUMMARY

TRENDS IN INSTITUTIONAL COSTS

Throughout the 1980s, the announcement of college tuitions each year resulted in a flurry of newspaper articles and editorials, describing and decrying the escalating cost of attending college. Attention to the highest tuitions has made students and parents worry that they will be unable to afford college, thus being denied the personal, social and economic benefits of higher education.

In response to this concern, Congress requested the Secretary of Education to report on the rising cost of obtaining a higher education. This report partially fulfills this request; it describes the cost of undergraduate collegiate education, how that cost has grown in recent years, and examines the reasons college costs have increased.

How Higher Education Tuitions Have Changed

College tuitions have increased rapidly during the 1980s. Since 1965, the average tuition and required fees at both public and private institutions have accelerated steadily. The rate of growth has been markedly faster since about 1980, however.

- At four-year public colleges the average tuition paid by students increased from $560 to $1,502 between 1975 and 1985, an increase of 168 percent.
- At four-year private colleges prices went from $2,325 to $7,804 during the same period, up 205 percent.
- At two-year public colleges over the same period, tuitions went from $245 to $690, up 182 percent.
- At two-year private colleges tuitions went from $1,427 to $3,910, up 174 percent.

Those colleges and universities with the highest tuitions have received considerable attention in recent discussions of college costs. Tuitions at these schools have increased more rapidly than those at other schools. Between fall 1975 and fall 1987, tuitions at the 100 most expensive colleges and universities (all of which are private) grew from $3,382 to $11,435, an increase of 238 percent.

Tuition Growth Compared with Price Inflation

Tuition increases do not occur in a vacuum; the costs of other goods and services in the economy also increase. In the 1970s, tuition at private schools grew at about the same rate as other prices; tuitions at public schools actually declined relative to other prices. In the past decade, however, college has become much more expensive relative to other goods and services. In other words, tuition growth has outpaced general price inflation.

Public Perception of the Cost of Attending College

The American public believes that the cost of attending college is much higher than it actually is. A recent survey of 13 to 21 year-olds has shown that these individuals overstate costs for all types of institutions:

- Respondents believed, on average, that tuition, books and supplies for one year at a public four-year college or university cost $6,841 in fall, 1988. The actual figure, according to the College Board, was $1,977, less than a third of what young people expected.

- Respondents were similarly confused about costs at public two-year institutions. They expected that costs were, on average, $3,519. The correct figure was $1,158.

- Young people believed that the costs of attending a four-year private school were, on average, $10,843. The correct figure was $8,120.

These impressions about the cost of college may result from the attention given the most expensive institutions, even though only about 3 percent of students attend the 100 most expensive institutions. In fact, about 75 percent of all higher education enrollments were at public institutions in fall 1987 which had average tuitions that were only one-sixth of those of the average private institution.

Tuitions Compared with Family Incomes

Comparing tuition increases to changes in income provide a rough measure of families' ability to afford higher education. Although tuition has increased over time, median family income went up similarly until about 1980. Beginning in 1980, tuition increases outpaced growth in family income. As a result, the proportion of income needed to pay tuition increased. As of 1987:

- Tuitions at public institutions were, on average, 3.8 percent of median family income -- about the same as in 1965.

- At private institutions, however, tuitions increased to 22.1 percent of median family income -- substantially higher than the 16.6 percent figure for 1965.

- Relative to income, prices at the 100 most expensive institutions rose fastest, increasing from 26.0 to 37.3 percent of median family income between fall 1980 and fall 1987 (data unavailable for 1965).

Financial Aid and Other Sources of Assistance to Students

Comparisons of tuition and family income do not in themselves fully measure the affordability of higher education; many students receive financial aid that helps to offset the costs of higher education. Between fall 1980 and fall 1987, the amount of student financial aid provided by all sources increased 7 percent faster than inflation. The Escalating Costs of Higher

Education combines data on family income, college costs, and financial aid to assess how the affordability of college has changed over time for students from different income groups.

From the mid-1970s to the present, students have increased their reliance on loans as a means to pay for their education. Changes in the source of financial aid have also occurred. Although the Federal government provides, by far, the largest amount of direct aid to students, the proportion of student aid paid for by Federal sources has declined. Between the fall of 1980 and the fall of 1987, the share of aid provided by the Federal government declined from 83 to 75 percent. During this time, the share of aid provided by state governments increased as did aid provided by institutions.

Although the Federal government is the primary source of the financial aid that students receive, it is state governments that provide the greatest degree of overall support to higher education. State governments directly support public institutions and provide relatively low tuitions to all students who attend public colleges and universities.

In 1985, state and local governments provided $32.5 billion to colleges, mostly in the form of direct state subsidies. The Federal government provided colleges $12.7 billion, but most of this was in the form of restricted grants and contracts, i.e., payments for non-educational services.

Why Tuitions Have Been Rising

The most commonly cited reason for rising tuitions is that prices have gone up for the goods and services that colleges must purchase. But prices do not in themselves provide a full explanation for spending growth in that colleges have some choice of the amounts of goods and services they wish to purchase.

Some analysts have claimed that in recent years, colleges have approached the task of balancing revenues and expenditures by setting their tuitions first, i.e., they set their tuitions based on what they think the market will bear, and then allocating funds according to institutional priorities.

This report does not attempt to settle the question of whether tuitions lead expenditures, or vice versa. This report merely compares tuition and expenditures, and describes factors that have led to recent expenditure increases. The Escalating Costs of Higher Education, however, presents the results of an original econometric model that suggests that tuitions increased in the 1980s in part as a means of providing revenue to undertake new expenditures.

In addition to raising tuitions to cover expenditures (or to provide revenue to fund new expenditures), colleges may also raise tuition to make up for shortfalls in other forms of revenue such as Federal grants or private gifts.

Expenditures

Over ten years, between fall 1975 and fall 1985, per-student expenditures (on a full-time equivalent basis) grew at about the same rate as tuition. As with tuition, constant dollar expenditures were stable in the 1970s, but rose rapidly in the 1980s. Academic and administrative

needs comprise the largest share of college expenditures, and both have increased substantially. The report's findings regarding these expenditures are:

- Academic expenditures did not increase as rapidly as overall expenditures and, hence, declined as a portion of costs at both public and private colleges.

- Administrative expenditures, on the other hand, went up much faster than the overall rate of growth, increasing as a portion of costs within both the public and private sectors.

Other findings regarding expenditures include:

- Research costs have grown rapidly as a portion of costs at public colleges, but declined as a portion of costs at private colleges.

- Expenditures for plant operation have remained a relatively small and steady portion of overall costs to colleges, at both public and private colleges.

- Institutional scholarships have grown as a portion of costs at private colleges, rising about as fast as administrative expenditures.

Clearly, there is no single factor driving expenditure increases. Instructional costs, because they make up the largest part of college expenditures, have contributed more to increasing expenditures than any other single factor. Expenditures for college administration, while comprising a smaller portion of the budget, grew fastest, accounting for much of the new spending.

The following sections further summarize findings regarding college expenditures including faculty salaries, administration, plant operation and maintenance, and institutional scholarships. In addition, the effect of changing enrollment levels on expenditures is examined.

Faculty Salaries

Because faculty salaries are such a large component of expenditures, and because they have gone up rapidly in the 1980s, increasing faculty salaries is an important expenditure to consider in accounting for overall expenditure growth.

Between fall 1975 and fall 1980, faculty salaries lagged behind inflation, and recent salary increases have served to restore the purchasing capacity of college faculty.

- Between fall 1975 and fall 1985 faculty salaries increased by 87 percent in real dollars -- moderate compared to increases for accountants (103 percent), engineers (109 percent), and attorneys (114 percent).

There has also been a rapid growth in fringe benefits provided to higher education faculty in the 1980s, further helping to explain the growth in instructional expenditures.

Other changes in faculty that may affect costs include:

- Faculties have been aging. Between fall 1975 and fall 1987, the proportion of full professors grew from 28 percent to 35 percent of faculty. Assistant professors share of faculty declined from 33 to 25 percent of faculty over the same period. Since senior faculty generally receive higher salaries, overall instructional costs would tend to be higher when senior faculty are predominant.

- There has been a marked increase in the proportion of part-time faculty. Since part-time faculty are usually paid less, this could be expected to reduce overall instructional costs. But this does not consider the differences in workloads and activities of part-time faculty; therefore, no conclusion on the net effect on overall expenditures can be made here.

- While faculty compensation has risen, there has been little change in the average number of hours that college faculty spend teaching each week, as indicated by data from the fall 1975 and fall 1984 school years. Hence, whereas salaries have changed, teaching loads have not.

Administrative Expenditures

Administrative expenditures grew even faster than instructional expenditures; in fact, between fall 1975 and fall 1985 administrative expenditures grew faster than any other single expenditure category (except institutional scholarships at private colleges). The growth of administrative costs is a significant factor in the overall growth of higher education expenditures since administrative costs make up a large proportion of college budgets.

Administrative costs include fiscal, legal, and general operational costs, as well as student services such as admissions, recruiting, financial aid, placement, and other support functions. The main reason that administrative costs have gone up so quickly is that the number of college administrators has risen rapidly.

- Between 1966 and 1983 the proportion of non-teaching professionals as a percent of professional personnel rose from 17.5 percent to 23.2 percent of all full time staff.

Some analysts have pointed to the changing nature of higher education services to help account for these increased costs. For example, expenditures for recruitment of students and for soliciting charitable contributions have increased rapidly in recent years, according to several sources. While investments in these areas do increase administrative costs, they also appear to have paid off, considering improvements in the ability of colleges to manage enrollments and endowments.

Other new administrative activities or improved student services include: market analysis to improve pricing and financial aid strategy; advertising; improved academic and career advising; enhanced remediation and orientation programs; improved sports, recreational, and entertainment facilities; administrative computing; and, complying with Federal laws and regulations, such as equal access and waste-disposal rules.

Plant Operation and Maintenance

It has often been proposed that deferred maintenance of facilities during the 1970s forced expanded budgets for plant operation and maintenance in the 1980s. In fact, plant operation and maintenance costs rose 20 percent (in constant dollars) between fall 1975 and fall 1985. Therefore, increased maintenance costs have contributed to increasing college expenditures. It is not the case, however, that plant operation costs have gone up as a proportion of expenditures.

While plant operation costs did not grow as a proportion of expenditures, this may be because needs in this area went unfulfilled. There is evidence that the overall infrastructure of the nation's higher education system is reaching a critical state.

- A consortium of higher education associations has issued a report which estimates that colleges and universities deferred four dollars of needed maintenance for every one dollar spent in 1988.

If this is correct, college administrators may have resisted pressures to spend more than they did on operation and maintenance during the 1980s. Eventually spending in this area may have to rise to cover the shortfall. So far, however, plant operation and maintenance has not been a leading factor in driving up expenditures.

Institutional Financial Aid

Aid to students provided by colleges themselves is issued in the form of tuition discounts and student aid. While this is a small expenditure component at public colleges (3 percent of expenditures in fall 1985), it is much more important at private colleges, amounting to 10 percent of expenditures in fall 1985.

At private colleges, institutional scholarships grew by 35 percent (in constant dollars) over the 10 year period ending in 1985. This is the fastest rate of growth for any category of college expenditures, public or private.

Some college administrators have claimed that shortages of governmental student aid have increased the need for institutionally-based scholarships. Therefore, according to some colleges, overall prices were raised to finance this increased assistance.

- Between fall 1980 and fall 1987, the amount of available Federal aid (in constant 1985-86 dollars) declined by $626 million, while constant-dollar institutional aid grew by $1,696 million.

Effects of Enrollment Changes on College Costs

Another factor helps to explain why expenditures have increased quickly in recent years: slower rates of enrollment growth. According to this view, when enrollments increase rapidly, as they did throughout the 1970s, increasing costs can be continuously spread across more students

each year. This tends to mask overall growth in expenditures -- until enrollment growth slows down, as it did in the 1980s.

Enrollments increased rapidly from fall 1965 to fall 1980, but growth in enrollments slowed after 1980. College finance data show that differing rates of enrollment growth have greatly impacted per-student expenditures.

- Between fall 1975 and fall 1985, per-student expenditures went up by 8 percent in public colleges with enrollment increases of 25 percent or more. Public colleges with a 10 percent decline in enrollment, however, had per-student expenditure increases of 39 percent, over the same period.

- The same analysis for private institutions showed 3 percent expenditure growth accompanied a 25 percent increase in enrollment. Enrollment declines of 10 percent or more accompanied an average 47 percent increase in college expenditures.

- These changes in per student expenditures were not, however, associated with similar changes in tuitions.

Thus, there is strong evidence to suggest that changes in enrollment are an important influence on institutional costs, and have played a role in recent expenditure growth.

Revenues

Changes in the availability of funds from non-tuition sources -- from governments and contributors -- clearly impact what institutions must charge. And colleges get a very large portion of their revenues from non-tuition sources -- 44 percent for private colleges, and 82 percent for public colleges (as of fall 1985).

The most significant change in college revenues between 1975 and 1985 is that tuition and fee revenues have made up a larger proportion of overall revenues -- which means that students and their families are paying a greater proportion of the costs of their education.

If sources of revenue available to colleges decline, schools will be pressured to raise additional revenue by boosting tuition unless they are able to also reduce expenditures. One important source of revenue is state and local appropriations, which provide the majority of funds for public institutions, though they provide less than 2 percent of the revenue of private institutions. Growth in government appropriations almost kept pace with overall revenue growth (down slightly from 61 percent of revenues in fall 1985 to 63 percent in fall 1975). Therefore, reduced efforts at the state and local level are, on the whole, responsible for a small part of the increased costs to students.

One source of revenue received by both private and public institutions is Federal grant money provided directly to institutions. At public colleges, Federal grants fell from 13 to 10 percent of revenues between fall 1975 and fall 1985. At private colleges the decline was similar, falling from 19 to 15 percent over the same period.

Private contributions, on the other hand, helped make up for other declining revenues over the 1975 to 1985 period.

- At private colleges, endowment revenues went from 6.5 percent of revenues in fall 1975 to 7.7 percent in fall 1985. While this is not significant for most private colleges, for the small proportion of private colleges that have a sizeable endowment the rise was important.

- At public colleges, private gifts went up as well, from 2.8 to 4.1 percent of revenues over the 1975 to 1985 period. Endowment earnings for public colleges doubled over the period as a proportion of revenues, but still represent less than 1 percent of revenues.

Analysis of overall revenue trends yield one important finding: tuition and fee increases during the 1980s not only paid for growing expenditures, but also compensated for slower growth from other revenue sources, i.e., shortfalls in revenue from non-tuition sources put pressure on colleges and universities to raise their tuitions.

The "Public Ivys" and Expensive Private Institutions

The public and private sectors of higher education each contain a special group of institutions that are prestigious, well-known, and in high demand. They are important to an understanding of college costs because they are generally more expensive than other colleges within their sectors; they receive much public attention; their tuitions have gone up faster than those at other colleges; they dominate in filling many important and powerful positions in all areas, including business, academia, and government; and, they consistently turn away a large number of applicants -- which means that education at these schools is rationed, primarily on the basis of merit. However, they should not be overemphasized since they enroll only a small minority of college students.

This report examines the 100 most expensive institutions among private schools and a small number of public institutions often considered peers of the elite private colleges and universities, referred to in this report as "the public ivys." Budgets are larger at the public ivys than at other public institutions. Budget size is also the main difference between the 100 most expensive institutions and other private institutions. Each of these selected institution types spent, on average, more than twice as much money per student than the average institution in their respective sector in 1985-86.

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CHAPTER I

INTRODUCTION

In 1986, the Congress of the United States mandated a study of higher education costs to be conducted by the Secretary of Education. The study is required to:

- Identify the current cost of obtaining a higher education and determine how that cost has changed in recent years;
- Determine the specific causes of such changes in cost and the extent to which those causes have contributed to such changes;
- Forecast the future cost of obtaining a higher education with consideration given to prospective demographic changes in student enrollment;
- Evaluate the impact of such changes in cost on institutions of higher education, their students, and lower and middle income families;
- Make recommendations on how such changes in cost can be minimized in the future; and
- Outline State and Federal policy options which may help to minimize such changes in the future (P.L. 99-498, section 11303).

This report responds to the first two elements of the Congressional mandate and focuses on current tuition levels and their changes over time, as well as attempts to explain why tuitions have been increasing faster than inflation in the 1980s. The scope of the report is restricted to non-profit undergraduate education. Thus, other segments of postsecondary education, such as proprietary schools (for-profit vocational and technical schools) and graduate education are not discussed. However, there is tremendous diversity even among institutions offering undergraduate education. Vast differences exist between the public and private sectors, and there is also a great deal of variance within each of these two categories. Analysis presented in this report is sensitive to this diversity.

The Congressional mandate on higher education costs was prompted by increasing public concern about college costs. As a further response to this concern, the Committee on Education

and Labor of the U.S. House of Representatives held hearings on higher education costs on September 15, 1987. At these hearings, college presidents, deans, higher education association executives, education consultants and others testified regarding rising tuitions and their impact on students and the American public.

This concern over rising college costs is evidenced more frequently in another forum. The announcement of new tuition rates each year results in a flurry of articles and editorials in major U.S. newspapers and magazines. These articles generally compare new tuitions to previous ones, as well as to increases in standard inflation measures such as the Consumer Price Index (CPI). The articles often highlight the most expensive private institutions, whose tuitions are considerably higher than the overall average and whose rates of increase generally exceed most other institutions.

Often ignored in the public debate is the fact that tuitions vary considerably among different types of colleges. For example, in the 1989-90 academic year, the average tuition at public four-year colleges was $1,694 while the average tuition at private four-year institutions was $8,737 (College Board, 1989). This constitutes an average difference of approximately $7,000 in the tuitions charged by public and private four-year schools for this academic year.

A simple comparison of public and private tuition differentials can also be misleading. Within both of these sectors there is a tremendous amount of variance in tuitions charged. Among public schools in 1989-90, for example, residents of North Carolina could attend the University of North Carolina at Chapel Hill for $876 and residents of the state of Texas could attend the University of Texas at Austin for $964. In contrast, in-state tuition for the University of Vermont was $3,986. When tuitions at two-year schools are considered, the variance expands even further. A California resident could attend Chaffey Community College for $102 in 1989-90,

while an Ohio resident would pay $1,440 to attend Edison State Community College in the same year.

Private school tuitions vary to even greater extremes. A recent report released by the National Association of Independent Colleges and Universities (NAICU) states that there were three times as many independent schools that charged less than $5,000 in tuition and fees than there were independent schools charging more than $10,000 in 1988-89 (NAICU, 1989). Cooper Union in New York, for example, charged $300 for tuition in 1988-89 while Bennington College charged $16,495 the same year.

Because so much of the media attention focuses on tuitions in some of the higher cost institutions, the American public perceives the costs of attending college to be considerably higher than they actually are. A 1988 survey taken by the Gallup Organization for the Council for Advancement and Support of Education found that high school juniors and seniors overestimated the cost of attending a public institution by almost $5,000 per year. Students also believed the cost of attending a private school to be more expensive than it is (Magner, October 12, 1988).

Moreover, relatively few of the many articles decrying tuition increases point out the fact that an overwhelming majority of undergraduates in this country -- approximately 80 percent -- attend public institutions. The exceptionally high tuitions at the most expensive private colleges and universities in this country affect a very small handful of students. For example, the 100 most expensive schools in 1987-88 enrolled 295,947 undergraduates, or slightly under three percent of all those enrolled. The 25 most expensive schools for that academic year enrolled only 83,018 undergraduate students or under one percent of all undergraduates enrolled in all public and private two- and four-year colleges and universities that year.

Nonetheless, tuitions in both public and private higher education institutions are a national concern. This report, in response to the Congressional mandate, examines tuition

increases and explanations for them with particular sensitivity to the diversity within American higher education. The remainder of this chapter outlines the subsequent chapters of this report. It also discusses data sources used and methodological issues central to the data analysis.

Organization of the Report

Chapter II examines tuition charges since 1965 in public and private institutions. All of these tuitions are compared to changes in the Consumer Price Index, as well as to median family income. A brief discussion of financial aid is also included.

Chapter III summarizes some common explanations for rising tuitions. Some of the reasons offered include: increases in faculty salaries to make up for real (constant) dollar salary declines in the late 1970s; increases in the size and salaries of the administrative component of college and universities' administrations; increases in the operation and maintenance of institutions' physical plant; shifts in revenue; and the public's willingness to pay higher tuitions.

In Chapter IV the revenue and expenditure patterns in both public and private institutions are discussed. This chapter also compares trends in the public and private sectors over time to determine whether some explanations for tuition increases may be more valid for one sector than the other.

Chapter V looks beyond the expenditure trends presented in Chapter IV by examining the actual goods and services that colleges purchase. Particular attention is focused on changes in institutions' faculties and administrations and how they may have affected the costs of operating a higher education institution.

Chapter VI examines the revenue and expenditure trends of the 100 most expensive private institutions and a group of well-known, selective public institutions known as the "public ivys." Enrollment patterns of these schools are discussed as well.

Data Sources

Throughout this report, several different data sources are used to provide as thorough a picture as possible of higher education costs and the factors that influence them. The major data used are from the following sources:

- Data from the Higher Education General Information Survey (HEGIS) and Integrated Postsecondary Education Data System (IPEDS), collected from institutions by the U.S. Department of Education;
- The 1989 Digest of Education Statistics published by the National Center for Education Statistics; and
- Reports published by the College Board.

Each source contributes to this report in a different way. Data from the Digest of Education Statistics go back to 1965 and so provide an historical perspective on tuition charges and other trends in higher education. However, these data are available only through 1985-86. Data from the College Board complete the story by providing some of the most current published information available on college tuitions.

While published data describe aggregate historical trends, primary analyses provide a more detailed look at different segments of the higher education system. Primarily analyses in this report use data from both the Higher Education General Information Survey (HEGIS) and the Integrated Postsecondary Education Data System (IPEDS), sponsored by the U.S. Department of Education. HEGIS provided data yearly on institutional characteristics, opening fall enrollments, faculty salaries, financial issues, and degrees awarded between 1965-66 and 1985-86. In the 1986-87 academic year, HEGIS was expanded into IPEDS and included proprietary schools. IPEDS instruments are similar to HEGIS surveys; together these data bases facilitate examination of trends in American higher education over the past two decades.

Tuition analyses of HEGIS and IPEDS data in this report are generally limited to four academic years: 1975-76, 1980-81, 1984-85, and 1987-88. Revenue and expenditure analyses focus on three academic years: 1975-76, 1980-81, and 1985-86. 1975-76 was selected as the base year because it was exactly 10 years before the availability of the most recent revenue and expenditure data (1985-86). The years 1975-76 and 1980-81 are also used in both sets of analyses because they frame the late 1970s, a period of special interest because this period immediately preceded the rapidly rising tuition of the 1980s. Other years selected reflect either data limitations or the most recent available HEGIS or IPEDS data that have been released.[1]

This report uses original analyses of HEGIS and IPEDS data to explore the diversity within the public and private sectors by examining subgroups of institutions within each sector. Within the private sector, the 100 schools with the highest tuitions are analyzed separately to determine if their tuition, enrollment, and financial patterns differ from those of other institutions. In the public sector, a group of well-known, selective institutions commonly referred to as "public ivys" are analyzed to determine if applications to these schools have increased as the public seeks alternatives to costly private institutions. The analysis of the "public ivys" also compares enrollment, tuition, expenditure and revenue patterns of these institutions to those of other public institutions.

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[1]Because of problems with 1985-86 HEGIS tuition data, the 1984-85 year is used. The most recent financial data available are for the 1985-86 academic year, and the most recent opening fall enrollment data released are for the 1986-87 academic year.

Methodological Issues

Several methodological issues are central to the analyses throughout this report. Specifically, these are:

- the use of weighted tuitions, as well as weighted revenue and expenditure data; and
- the use of economic indices such as the Consumer Price Index and median family income.

Each of these issues is briefly described below.

Weighting

Consistent with the practices of both the National Center for Education Statistics and more recently the College Board, tuition data presented throughout this report, unless otherwise noted, are weighted averages based on the number of students attending a particular type of institution. Undergraduate tuitions are weighted by undergraduate full time equivalent (FTE) students so that tuition figures represent the average tuition paid by undergraduate students, not the average charges of the institutions they attend. This emphasis corresponds to the focus of the Congressional mandate, i.e., the cost to students and their families of obtaining higher education. Data presented in this way also automatically take into account shifts in enrollment over time. Institutions attended by very few undergraduate students are not weighted the same as large institutions enrolling tens of thousands, and if enrollments decline in one type of institution but increase in another, the tuition figures reflect this change.

Financial data are also enrollment-weighted in this report. However, enrollment figures used for revenue and expenditure calculations include both graduate and undergraduate students. This is because both types of students share institutional facilities and services (e.g., laboratories, gymnasiums, and registrars' services) on many campuses. Revenues and expenditure amounts are

calculated by summing all the amounts in a particular budget category across all schools of one type and then dividing by the total number of students attending that type of institution.

To calculate these weighted averages, the number of full-time equivalent students in an institution must be determined. Many students who are enrolled in colleges and universities are not enrolled full-time. Different institutions use somewhat different formulas for deriving full-time equivalent enrollments. Essentially, FTE student calculations convert part-time students into some fraction of a full-time student and add these to the number of students enrolled full-time. One standard practice is to consider three part-time students to be equal to one full-time student. This is the practice used in this report to weight data.[2]

Consumer Price Index

Since our report focuses on tuitions and explanations for their increases, a means of comparing different amounts of money in different time periods is needed. What $100 will purchase today is not the same as what $100 would purchase ten years ago, or even one year ago. We thus need some measure of how the purchasing power of the dollar has changed as prices have become inflated.

Inflation is measured by calculating the cost of a "basket of goods" which represents the typical family's yearly expenditures (a certain amount of bread, movie admissions, light bulbs, etc.). The amount of money required to purchase these goods and services is calculated each year. Since the items purchased are virtually the same each year, the increase in the amount of money required to buy them is a measure of the rate of inflation. This figure is then translated into an index which describes the change in the value of a dollar from year to year. The most commonly

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[2]The National Center for Education Statistics uses FTEs reported by institutions. If, however, these data are not provided, they consider three part-time students to be the same as one full-time student. Because of a desire to use a consistent measure throughout, we calculated FTEs for all schools, regardless of whether they reported one. Thus, our results may be slightly different from those published by the National Center for Education Statistics.

used measure of inflation is the Consumer Price Index, so named because the "basket" of goods it uses is composed of consumer goods.

This report uses the CPI since the primary focus of the Congressional mandate is the cost of higher education to students and their families. While other indices measure the inflation rate of the products and services purchased by a college or university, the CPI reflects the inflation rate experienced by families and students who pay college tuitions. Moreover, the CPI is a nationally recognized inflation measure against which college tuitions are frequently compared. Comparing yearly changes in the CPI to yearly changes in tuition, as well as to the expenditures and revenues of higher educational institutions, reveals how much tuitions have increased relative to other common expenses.

This report uses an academic year CPI, which was derived by averaging the mean monthly CPI for the period from July 1 to June 30. This figure can be adjusted to convert dollars from any period to constant dollars. We generally convert to 1985-86 dollars since this is the last year of financial data available in HEGIS/IPEDS. This conversion was performed by dividing each year's CPI by the 1985-86 CPI, and then multiplying this conversion factor by the actual (current) dollar amount. Figures thus converted are reported as "constant" or "real" dollars in this report.

Median Family Income

Another measure commonly used as a comparative yardstick across time is median family income. Half of all families have incomes below the median amount and half have incomes above the median. Comparing tuitions to median family income in different time periods provides a means of determining how tuitions have increased relative to family income.

Understanding these technical issues helps to explain the data pertaining to higher education costs presented in the following chapters. Colleges and universities vary greatly from one institution to another; their tuitions reflect these differences and need to be accounted for in

an analysis of rising college costs. This report, in response to the Congressional mandate, recognizes the need to examine carefully the diverse institutions in American higher education to provide an accurate appraisal of college costs.

CHAPTER II

TUITION TRENDS

Faster-than-inflation tuition increases have taken place during the 1980s in all types of higher education institutions. While financial aid has helped mitigate the costs of higher education for individuals and families, sustained tuition growth at the rates of the early 1980s threaten to make higher education increasingly difficult to finance for many. The prospect of recurrent tuition increases is particularly menacing if family income does not grow commensurately. Moreover, the large differential between public and private tuition has become even larger due to especially sharp tuition increases among the private institutions.

This chapter compares tuition changes to changes in standard economic indicators such as the Consumer Price Index and median family income over time. These comparisons indicate that:

- *During the 1970s tuition generally grew slower than inflation; however, this trend reversed in the 1980s, with tuitions increasing faster than inflation in both the public and private sectors.*
- *The gap in tuitions between public and private institutions has widened in the last ten years.*
- *As a percentage of median family income, public tuitions have remained relatively constant over the last twenty years, while private tuitions remained constant only until 1980 and then began increasing steadily.*
- *Tuitions at the nation's 100 most expensive institutions have risen faster than both the public and private sector averages during the 1980s.*
- *Financial aid has changed considerably since the mid 1970s. Grants now comprise a much smaller proportion of total aid than they did in the 1970s, and the Federal government's relative contribution to financial aid has declined.*

Enrollment Trends

Since postsecondary students are heavily concentrated in certain types of schools, enrollment patterns are necessary to inform any discussion of tuition at a national level. Thus, enrollment patterns need to be considered before examining tuition trends. Figures on full-time equivalent enrollments, which include graduate and first professional students as well as undergraduates, indicate that 75 percent of all students enrolled in higher educational institutions are enrolled in the public sector (see Exhibit II-1). This proportion has remained relatively stable since at least 1970.

EXHIBIT II-1

Enrollment Trends by Sector

		PUBLIC		PRIVATE				
Year (fall)	Total FTE	2-Year	4-Year	2-Year	4-Year	Total Public	Total Private	Total
1970	6,737,819	21.0%	52.6%	1.6%	24.9%	73.6%	26.5%	100.1%
1971	7,148,575	22.6	42.2	1.5	23.8	74.8	25.3	100.1
1972	7,253,739	24.1	51.1	1.4	23.4	75.2	24.8	100.0
1973	7,453,448	25.6	49.9	1.4	23.1	75.5	24.5	100.0
1974	7,805,453	26.9	49.3	1.3	22.5	76.2	23.8	100.0
1975	8,479,685	29.0	47.9	1.3	21.8	76.9	23.1	100.0
1976	8,312,502	28.3	48.1	1.4	22.3	76.4	23.7	100.1
1977	8,415,339	28.0	48.0	1.5	22.5	76.0	24.0	100.0
1978	8,348,482	27.4	47.9	1.6	23.2	75.3	24.8	100.1
1979	8,487,317	27.5	47.8	1.6	23.1	75.3	24.7	100.0
1980	8,819,013	28.2	47.2	2.0	22.7	75.4	24.7	100.1
1981	9,014,521	28.5	46.7	2.1	22.7	75.2	24.8	100.0
1982	9,091,648	28.9	46.4	2.3	22.3	75.3	24.6	99.9
1983	9,166,399	28.5	46.5	2.5	22.5	75.0	25.0	100.0
1984	8,951,695	27.3	47.3	2.4	23.0	74.6	25.41	100.0
1985	8,943,433	27.2	47.4	2.5	23.0	74.6	25.5	100.1
1986	9,059,956	27.4	47.5	2.3	22.8	74.9	25.1	100.0

SOURCE: National Center for Education Statistics, Digest of Education Statistics, 1988, p. 151.

However, a growing proportion of undergraduate students in public institutions attend two-year institutions. Whereas in 1970, 21 percent of all students enrolled in higher education attended public two-year schools, by 1986 this percentage had increased to 27 percent. There was a corresponding decrease in the proportion of students in public four-year institutions, from 53 percent in 1970 to 47 percent in 1986, although in absolute numbers, enrollment still increased substantially.

When undergraduate enrollments only are considered, the proportion of students in the public sector increases to 79 percent for the 1986-87 academic year. Specifically, 30 percent of all undergraduate students are in public two-year schools and 49 percent are in public four-year institutions. Thus, the vast majority of undergraduates in this country enroll in public institutions where the average tuition is much lower than in private schools.

Unlike the public sector, the private sector essentially serves students in four-year institutions. As of 1986 only 2.3 percent of all students in higher education were enrolled in two-year private institutions while 22.8 percent were enrolled in private, four-year institutions.

Enrollments are central to the calculation of tuition averages throughout most of this report. With the exception of a brief discussion of trends in out-of-state tuitions, the tuition figures presented are weighted by FTE students. This is the case for both published data and the analyses of HEGIS and IPEDS data. As discussed in Chapter I, weighting undergraduate tuitions by undergraduate enrollments results in a tuition amount which is the average tuition incurred by undergraduate students in the particular type of institution, not the average tuition charged by that type of school.[1] This method of weighting also takes into account shifts in enrollment over time.

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[1]HEGIS did not gather data that differentiate between in-state and out-of-state enrollments. In-state tuitions are thus weighted by all undergraduate FTEs, a practice shared by the National Center for Education Statistics. Data on out-of-state tuitions are presented without enrollment weights.

Tuition Trends

Average tuitions in both public and private institutions have been increasing since the mid-1960s (see Exhibit II-2). The average annual rate of increase since 1980, however, has been higher than in most previous years. Whereas public tuitions increased 46 percent in current (unadjusted) dollars during the five year period between 1975-76 and 1980-81, the rate of increase was 65 percent for these institutions during the next five-year period. The rates of increase for private institutions were 54 percent and 65 percent, respectively, during these two time periods.

Tuition increases among private institutions at rates equal to or faster than increases at public institutions have widened the gap between the costs of public and private higher education. The ratio of private to public tuition grew from 4.5 to 1 in 1965-66 to 5.2 to 1 in 1975-76. Tuition differences continued to increase, albeit at a slightly slower rate, over the next ten years, to reach 5.5 to 1 in 1985-86. The most recent data available from the Department of Education reveal that in 1987-88, the average tuition of private institutions in this country was almost six times the average tuition charged by public institutions.

Within each sector, there is still considerable variance in tuitions. Exhibit II-3 compares tuitions in different types of public and private institutions. Within the public sector, the major difference to note is between two-year and four-year institutions. Tuitions in four-year institutions were double those of two-year institutions in all time periods examined. In 1987-88, for example, the average tuition for a student attending a two-year public college was slightly under $700, while the average tuition paid by a student attending a four-year public school was approximately $1500.

Among the private schools, what is notable is the much faster rate at which tuitions at the most expensive schools increased. Whereas tuitions in the 100 institutions charging the highest tuitions increased by 238 percent between the 1975-76 and 1987-88 academic years, tuitions in all private four-year schools increased by only 205 percent during this same time period.

EXHIBIT II-2

Overview of Trends in Undergraduate Tuition
in Current (Unadjusted) Dollars

Academic Year	Tuition and Fees Public*	Private	Percent Change Public	Private	Ratio: Private/Public
1965-66	$257	$1,154			4.5
1966-67	275	1,233	7%	7%	4.5
1967-68	283	1,297	3	5	4.6
1968-69	295	1,383	4	7	4.7
1969-70	323	1,533	9	11	4.7
% Increase: 1965-66 to 1970-71			37%	46%	
1970-71	351	1,684	9	10	4.8
1971-72	376	1,820	7	8	4.8
1972-73	407	1,898	8	4	4.7
1973-74	438	1,989	8	5	4.5
1974-75	432	2,117	-1	6	4.9
% Increase: 1970-71 to 1975-76			23%	35%	
1975-76	433	2,272	0	7	5.2
1976-77	479	2,467	11	9	5.2
1977-78	512	2,624	7	6	5.1
1978-79	543	2,867	6	9	5.3
1979-80	583	3,130	7	9	5.4
% Increase: 1975-76 to 1980-81			46%	54%	
1980-81	633	3,498	9	12	5.5
1981-82	721	3,972	14	14	5.5
1982-83	798	4,439	11	12	5.6
1983-84	891	4,851	12	9	5.4
1984-85	971	5,314	9	10	5.5
% Increase: 1980-81 to 1985-86			65%	65%	
1985-86	1,044	5,778	8	9	5.5
1986-87	1,106	6,316	6	9	5.7
1987-88	1,160	6,820	5	8	5.9
% Increase: 1985-86 to 1987-88			11%	28%	

*In-state tuition charges.

SOURCE: U.S. Department of Education, Digest of Education Statistics, 1988, pages 251-252.

EXHIBIT II-3

Undergraduate Tuition Trends
in Current (Unadjusted) Dollars

Academic Year	Public Institutions* Four-Year	Public Institutions* Two-Year	Private Institutions Four -Year	Private Institutions Two-Year	Private Institutions 100 Most Expensive
1975-76	$560	$245	$2,325	$1,427	$3,410
1980-81	800	385	3,552	2,413	5,463
1984-85	1,228	584	5,468	3,485	8,862
1987-88	1,502	690	7,084	3,910	11,511
% Increase: 1975-1987	168%	182%	205%	174%	238%

*In-state Tuition

SOURCE: U.S. Department of Education, Digest of Education Statistics, 1988, pages 251-252.

HEGIS & IPEDS analysis by Pelavin Associates.

Tuition Increases and Inflation

Comparing changes in tuition to annual Consumer Price Index adjustments provides a basis for judging whether tuition has increased faster than other goods and services that families typically purchase. In the late 1970s, the CPI rose much faster than average tuition in both the public and private sectors. In contrast, in the early 1970s and again in the 1980s, tuition increases in both sectors greatly exceeded inflation as measured by the CPI. Exhibit II-4 graphs yearly percent changes in tuition for public and private institutions, as well as annual changes in the CPI.

Constant dollar calculations provide another way of looking at increases in tuition relative to inflation. Using the CPI, dollar amounts from different years can be adjusted to reflect their value in a given year, i.e., a constant dollar amount. Exhibit II-5 compares the average tuitions for public and private institutions and the 100 most expensive institutions from 1965-66 through 1987-88 in constant 1985-86 dollars. This exhibit also includes the percentage increase in tuition in each sector between 1975-76 and 1987-88, as well as the percentage increase of the public-private tuition differential for the same interval.

In the public sector, tuitions actually declined nine percent in constant dollars between 1965-66 and 1980-81. There were fluctuations over these years, but no major increases. However, since 1980-81, there has been a 37 percent increase in tuition in the public sector. The average real tuition in the private sector inched up between 1965-66 and 1972-73, remained fairly level until 1980-81, then increased 46 percent between 1980-81 and 1987-88.

Increases in tuition for the 100 most expensive private institutions were moderate between 1975-76 and 1980-81, but began increasing quite rapidly between 1980-81 and 1987-88. In constant dollar terms, the average tuition in these schools increased almost $4,000 between 1980-81 and 1987-88 (52 percent), compared to a 46 percent tuition increase (approximately $2,000) for all private schools.

The difference in the amount of money required to send a child to a private school versus a public school increased by 47 percent between the 1975-76 and 1987-88 academic years. In constant dollar amounts, the difference rose from $3,608 to $5,317. Even more dramatic is the

Exhibit II-4

Trends in Undergraduate Tuition and Fees

Academic Years 1965-66 through 1987-88

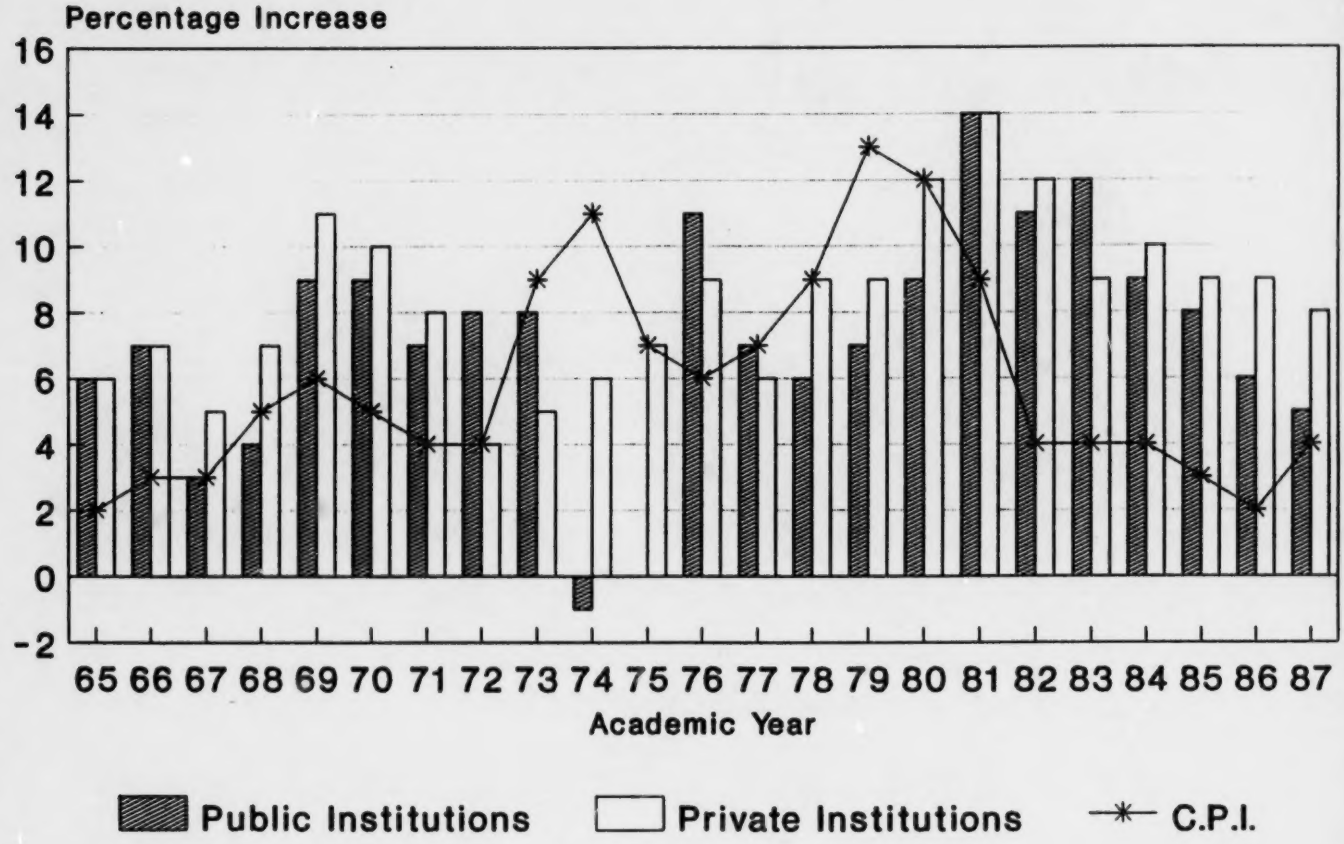

EXHIBIT II-5

Undergraduate Tuition in 1985-86 Dollars

Academic Year	Public Tuition*	Private Tuition	100 Most Expensive	Differences Pub-Priv	Differences 100-Priv
1965-66	$876	$3,934		$3,058	
1966-67	909	4,076		3,167	
1967-68	906	4,150		3,245	
1968-69	900	4,219		3,319	
1969-70	930	4,416		3,486	
1970-71	961	4,613		3,651	
1971-72	994	4,813		3,818	
1972-73	1,035	4,825		3,790	
1973-74	1,022	4,642		3,620	
1974-75	908	4,449		3,541	
1975-76	850	4,458	6,691	3,608	2,233
1976-77	888	4,574		3,686	
1977-78	890	4,559		3,669	
1978-79	863	4,554		3,692	
1979-80	817	4,387		3,570	
1980-81	795	4,394	6,863	3,599	2,469
1981-82	834	4,593		3,759	
1982-83	885	4,921		4,037	
1983-84	953	5,186		4,234	
1984-85	999	5,467	9,117	4,468	3,650
1985-86	1,044	5,778		4,734	
1986-87	1,082	6,179		5,097	
1987-88	1,090	6,406	10,818	5,317	4,339
% Increase: 1975-76 to 1987-88	28%	44%	62%	47%	94%

*In-state tuition charges.

SOURCE: U.S. Department of Education, Digest of Education Statistics, 1988, pages 251-252.

dollar difference between the average tuition at the 100 most expensive schools and other private institutions, which increased from $2,233 to $4,339, or 94 percent between 1975-76 and 1987-88. These data show both how rapidly tuitions among the most expensive schools are rising and how high they are in absolute dollar terms.

Tuition Increases and Family Income

Another way to place tuition in economic perspective is to compare tuition to income. Tuitions have risen, but so has family income. If family income is growing faster than college tuitions, then a smaller portion of families' earnings may be required to pay for higher education. However, if tuition is rising faster than family income, then families may have increasing difficulty financing higher education.

Exhibit II-6 compares median family income to average tuitions in the public and private sectors and the 100 most expensive institutions.

Since the average tuition at private institutions is much higher than at public institutions, private tuition also represents a larger share of median family income -- 22.1 percent in 1987-88, compared to 3.8 percent for public institutions. Moreover, private tuition as a percentage of family income has grown since the mid-1960s, while the average public tuition has remained a basically stable proportion of median family income (between three and four percent). Throughout the late 1970s, the average private tuition also remained essentially stable as a percentage of median family income, albeit at a much higher level (between 16 and 17 percent); but in the 1980s, this percentage rose sharply to 22.1 percent in 1987-88. The proportion of income required to send a student to one of the 100 most expensive colleges increased even faster during the 1980s, from 26.0 percent in 1980-81 to 37.3 percent in 1987-88. Clearly, using almost 40 percent of income to pay for tuition alone is basically not feasible for families earning near or below the median amount.

Financial Aid

Discussions of what students pay to attend college are incomplete without some assessment of financial aid. Many students do not pay the full tuitions and other costs that

EXHIBIT II-6

Tuition Compared to Median Family Income

Academic Year	Median Family Income	Tuition as a % of Median Family Income		
		Public	Private	100 Most Expensive
1965-66	$6,949	3.7%	16.6%	
1966-67	7,523	3.7	16.4	
1967-68	7,940	3.6	16.3	
1968-69	8,638	3.4	16.0	
1969-70	9,448	3.4	16.2	
1970-71	9,864	3.6	17.1	
1971-72	10,290	3.7	17.7	
1972-73	11,112	3.7	17.1	
1973-74	12,046	3.6	16.5	
1974-75	12,904	3.3	16.4	
1975-76	13,720	3.2	16.6	24.9
1976-77	14,958	3.2	16.5	
1977-78	16,017	3.2	16.4	
1978-79	17,637	3.1	16.3	
1979-80	19,600	3.0	16.0	
1980-81	21,032	3.0	16.6	26.0
1981-82	22,387	3.2	17.7	
1982-83	23,438	3.4	18.9	
1983-84	24,678	3.6	19.7	
1984-85	26,453	3.7	20.1	33.5
1985-86	28,323	3.7	20.4	
1986-87	29,459	3.8	21.4	
1987-88	30,853	3.8	22.1	37.3

institutions charge. Tuition, or the "sticker price," is reduced by financial aid awards that can come from a variety of sources and take a variety of forms. In the 1986-87 academic year, for example, close to one half of all undergraduates enrolled in institutions of higher education in this country received some type of financial assistance (National Center for Education Statistics, 1988b; p. viii).

The purpose of financial aid is to provide students with the financial resources to help attend any institution to which he/she is admitted. In theory, the cost of attending college should not be an obstacle for able students. However, if tuitions have increased without comparable increases in family income, then the amount of financial aid available to students would need to increase to preserve the viability of college choice.

There are essentially three different types of postsecondary student financial aid: grants, loans, and college work study. Together, loans and grants provide over 95 percent of all aid. Since loans must be repaid, they do not reduce the "net price" of attending college in the same way as grants. Most higher education analysts estimate the subsidy value of educational loans at 50 percent (Congressional Budget Office, 1988; McPherson, 1990).[2] In contrast, a grant is essentially a gift because the recipient is not required to repay it. Thus, the effect of financial aid on college attendance costs is measured not only in total aid amounts, but also in the type of aid received.

Since the mid-1970s, loans have displaced grants as the largest financial aid category. Whereas grants comprised 80 percent of all student financial aid in 1975-76, by 1980-81 grants had dropped to 56 percent and continued to decline to an estimated 47 percent by 1987-88. In contrast, student loans grew from 17 percent of total financial aid in 1975-76 to 40 percent of total aid in 1980-81 and an estimated 51 percent in 1987-88. These statistics reveal that students are increasingly paying for higher education through borrowing. These trends also indicate that as

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[2]Student postsecondary loans are subsidized in several ways. First, individuals who would not qualify for standard commercial loans are eligible for educational loans. Second, the interest rates on educational loans are generally below those of non-educational loans. And third, students do not begin repaying educational loans until they have left school.

tuitions increased, the relative contribution of educational grants to total financial aid decreased. Exhibit II-7 shows the composition of student financial aid by aid type in 1975-76, 1980-81, and 1987-88.

The relative portions of student financial aid contributed by Federal, state, and institutional sources have also changed somewhat since 1975-76. The Federal government provides most student aid funds. The Federal portion of aid remained relatively stable during the late 1970s, growing from 82 percent of total aid in 1975-76 to 83 percent in 1980-81. During the 1980s, however, the portion of total aid contributed by the Federal government decreased from 83 percent in 1980-81 to 75 percent in 1987-88. Between 1975-76 and 1980-81, state aid remained constant at five percent of total student aid, and institutional aid dropped slightly from 14 percent of total aid to 12 percent. However, state and institutional aid have grown much faster than Federal aid in the 1980s, thereby providing increasing portions of student aid. Institutional aid grew most dramatically (43 percent) between 1980-81 and 1987-88; at the end of this period institutional aid represented 19 percent of all student financial aid. Exhibit II-8 shows the composition of student financial aid by source in 1975-76, 1980-81, and 1987-88.

What is at issue in any discussion of rising tuitions is the role of financial aid in reducing the amount students and their families must pay for college. Two recent reports have attempted to determine how the "net price" of college has changed over time (Schenet, 1988; Congressional Budget Office, 1988). Aggregate financial aid amounts were subtracted from aggregate tuition charges in one instance and from average cost of attendance figures in another. Both analyses revealed declines in the net price of higher education in the 1970s and relatively sharp increases in the 1980s. The Escalating Costs of Higher Education examines individual student-level data to determine the impact of different types of financial aid on reducing college costs in different institutional settings.

EXHIBIT II-7

Comparisons of Student Financial Aid Awarded and Tuition Increases in 1985 Dollars

Academic Year	Financial Aid (in millions)	Public Tuition	Private Tuition
1975-76	$20,575	$850	$4,458
1980-81	21,653	795	4,394
1985-86	20,817	1,044	5,778
1987-88	23,058	1,090	6,406
% Increase: 1975 to 1987	12%	28%	44%

SOURCE: College Board, 1988.

Exhibit II-8

Tuition and Student Financial Aid
In Constant 1985-86 Dollars

	Undergraduate Tuition		Total Student Financial Aid	Federal Aid		State Aid		Institutional Aid	
	Public	Private	(In Millions)	(In Millions)	(As % of total)	(In Millions)	(As % of total)	(In Millions)	(As % of total)
Year									
1975-76	$849	$4,455	$20,748	$16,973	82%	$961	5%	$2,814	14%
1980-81	$795	$4,394	$21,648	$18,055	83%	$1,006	5%	$2,588	12%
1985-86	$1,044	$5,778	$21,422	$15,933	74%	$1,432	7%	$4,056	19%
1987-88	$1,090	$6,406	$23,126	$17,429	75%	$1,412	6%	$4,284	19%
Percent Increase									
1975-76 to 1980-81	-6%	-1%	4%	6%		5%		-8%	
1980-81 to 1987-88	37%	46%	7%	-3%		40%		66%	

Source: The College Board, 1989.
Trends in Student Aid 1980 to 1989.

CHAPTER III

EXPLANATIONS FOR TUITION INCREASES

This chapter briefly describes common explanations for recent increases in undergraduate tuitions. These include:

- *Increases in the costs of providing a college education;*
  - *Increases in faculty salaries;*
  - *Increases in the costs of maintaining and operating the physical plant of college campuses;*
  - *Increases in administrative expenditures;*
- *Effects of enrollment shifts;*
- *Decreases in revenues from sources other than tuition;*
- *Institutions' raising tuitions so that they are comparable to those of peer institutions; and*
- *Howard Bowen's "'Laws' of Higher Educational Costs."*

Increases in the Costs of Providing an Education

Some explain rapidly rising tuitions as a consequence of the increasing costs of providing a higher education. Observers cite two principal reasons for the burgeoning costs of providing higher education. First, throughout the last decade, the prices of goods and services purchased by higher education institutions have tended to rise faster than overall inflation rates. Second, colleges spend increasing amounts of money to provide a quality educational experience. As notions of what comprises a "good education" expand to encompass more and different services and facilities, college expenditures rise.

Many argue that the goods and services which higher education institutions must purchase are considerably different from the goods and services used to calculate the CPI (Berger, 1987; CASE, 1987). For example, food and clothing, while major components of families' budgets and thus an important component of the CPI, are not what colleges typically cosume. However, other costs, such as faculty salaries and technological advances, contribute significantly to the

expenditures of colleges and universities. Defenders of rapidly rising tuitions thus claim that the CPI is not an appropriate yardstick for measuring increases in college costs.

A more elusive but related argument concerns the perception of quality in education. Higher education institutions have invested large sums of money in new programs and facilities to maintain and improve the quality of the education they provide. The changing skills required of college graduates in the job market also compel colleges and universities to modify their educational offerings accordingly. Computers, for example, have rapidly become requirements in many different courses, and institutions have spent money updating and expanding their computer equipment. However, the constraints of a steady income make it difficult for colleges to maintain traditional offerings and also absorb the costs of newer programs. Rarely can income growth keep pace with the additional costs without tuition increases (Warner quoted in Kelley, 1987).

Expectations of students and their families may have also changed over time, resulting in some added meanings of a "quality" education and educational environment. On many campuses, students have available to them not only books and professors, but also sports programs and facilities, career counselors and resources to explore career options, health clinics, and social centers. Permanent art collections and even museums also grace many campuses, as do performing arts auditoriums, olympic-sized pools, and gymnasiums. Prominent guest speakers and performers are not relegated to May commencement exercises; rather, they play a role in the academic environment year-round.

Although some of these facilities and programs are made possible through gifts and grants, institutional budgets often match the initial contribution and thereafter absorb a large portion of the operation and maintenance costs. Thus, growing numbers of institutionally sponsored activities contribute to increased expenditures, which may in turn drive tuition up. A comparison of the growth rates of tuition and fees and expenditures is included in Chapter IV.

Increases in Faculty Salaries in the 1980s

Because education is a labor-intensive industry, fluctuations in faculty salaries can have a major effect on an institution's expenditures. It has been proposed that faculty salaries in the

1980s have been increasing to regain their early 1970s value (Thrift, 1987). Recruiting faculty can be expensive, with various institutions engaging in bidding wars to woo the best candidates with promises of higher salaries, better equipment and facilities, and start-up research funds (Diffily, 1987). Critics allege that these costs are borne primarily by the undergraduate tuition-paying students, who benefit little from the faculty recruitment process.

The faculty salary issue is especially controversial because the stakes are so high. As of the academic year 1985-86, total instructional costs, most of which are faculty salaries, comprised 46 percent of total expenditures in the average public institution and 40 percent of total educational and general expenditures in the average private institution. Because teaching is a labor-intensive activity, productivity increases due to technological advances are more limited, in higher education institutions than they are in other types of organizations (CASE, 1987). Educators argue that while faculty salaries have been steadily increasing in the 1980s, they still have not caught up with their real value in the early 1970s (Thrift, 1987). Critics, on the other hand, charge that faculty are overpaid and underworked (Iosue, 1988). They also complain that research has displaced teaching responsibilities, so that teaching loads have been lightened and more faculty have had to be hired to teach the same number of undergraduate courses (Honigs, 1988). A detailed analysis of faculty salaries is contained in Chapter V of this report.

Increases in the Costs of Maintaining and Operating the Physical Plant

Another common explanation for tuition increases involves the expenditures needed to run and upgrade the physical plant of college campuses. Many argue that building repairs and expansions, like faculty salary increases, were deferred during the inflationary 1970s. Unable to ignore for any longer the pressing demands for physical plant renovations, many institutions have begun spending money for such purposes (Halpern, 1987). Chapter V examines the costs of physical plant operation and maintenance in light of rising college costs.

Increases in Administrative Expenditures

There has also been an increase in the human and financial resources that are devoted to non-teaching functions. Administrative staffs, auxiliary enterprises, and support services at

colleges have grown dramatically. Much of this growth is the result of increasing numbers of new student services, such as job placement, counseling, and health services and administrative positions (Iosue, 1987; O'Keefe, 1987).

Some college-watchers criticize the increasing proportions of budgets allocated to administrative functions. They argue that although administrations are not integral to the primary mission of undergraduate education, they help push tuitions higher. Students themselves have voiced this concern. In 1987, then-Dartmouth College student Christopher Baldwin wrote in The Dartmouth Review:

> Perhaps the biggest factor pushing up Dartmouth's tuition is its ballooning bureaucracy. Dartmouth currently has 412 senior administrators or roughly one bureaucrat for every professor. This is an increase of 206% since 1968. Furthermore, there are about 2,026 non-faculty employees -- one non-faculty employee for every two Dartmouth students. . . Dartmouth's bureaucracy costs about $19,776,000, or $3,955.20 per student (Baldwin, 1987).

Chapter V includes a discussion of the growth of administrative and other non-teaching positions at colleges and universities.

Enrollment Effects

Other higher education analysts attribute tuition increases to demographic changes in the college population and other enrollment-related effects.

One way tuitions may be affected by enrollments is through "economies of scale." This argument is premised on the assumption that serving a larger number of students yields a lower per-student cost. According to this theory (applied to higher education) all colleges provide certain facilities and services, regardless of their enrollment. Therefore the costs of maintaining these facilities and services per student decrease as enrollment increases (McLaughlin, et al., 1980). Some have tied per-student expenditures to changes in enrollment, arguing that growth in institutional expenditures was masked by growing enrollments during the 1960s and 1970s, since enrollments were climbing and expenditures could be spread over a growing number of students. In contrast, slower enrollment growth during the 1980s has contributed to higher per-student expenditures in these years (Hauptman, 1989).

On the other hand, the effect of enrollment on tuitions also depends on the type of students matriculating. Today's college and university campuses are dotted with increasing numbers of part-time students, many of whom are older and working full-time. These relatively new student populations may require special services such as educational re-entry counseling. Moreover, although only attending classes part-time, these students may use other college services, such as the registrar and career counseling offices, as often as full-time students. Three part-time students may therefore require more services than a traditional full-time student even though both are equivalent to a single FTE student. Thus, growing proportions of part-time students may contribute to increased per-FTE (student) expenditures. Chapter V further discusses higher education enrollment trends and their impact on college costs.

Decreases in Revenues

Changes in income can also influence an institution's tuition levels. If revenue from particular sources decline while expenditures remain the same or increase, then other sources of revenue, such as tuition, may need to expand to make up for such a revenue shortfall.

When arguing that colleges raise tuition to compensate for revenue shortfalls, many observers point specifically to decreases in Federally funded student aid. Although Federally subsidized student financial aid is not a direct revenue source for institutions, decreases in this aid may prompt colleges and universities to commit a higher percentage of their budgets to institutionally funded aid. Indeed, institutions have allocated increasing portions of their budgets to financial aid to meet students' financial aid needs at a time when college tuitions are rising faster than the CPI, and Federally funded aid is growing considerably slower than college tuitions (Thrift, 1987; Hauptman, 1989). Mainly these changes in student aid have affected private institutions that have attempted to maintain access for low- and middle-income students in the face of their relatively high tuition levels. A discussion of these and other changes in the composition of student financial aid is included in Chapter IV.

Some observers say that private colleges have become self-appointed "Robin Hoods" when setting tuitions (Fiske, 1987). According to this argument, tuition increases represent not only the funds needed to cover higher operating costs, but also those needed to meet anticipated financial aid requests. Thus, tuition revenue from students who pay the full amount contribute to financial aid for students who are not able to pay the full tuition. However, critics argue that tuition-paying students should not have to bear the costs of equal educational access by subsidizing their classmates (Martin, 1988).

Voluntary support, or contributions to endowments, have also become a less reliable source of revenue. As with Federal aid, this mostly affects private institutions. Institutions report that in the wake of the 1987 stock market crash, people felt reluctant to contribute to educational institutions. Corporate benefactors have also been much more selective in their giving to colleges and universities. More companies are restricting their donations to programs that will educate graduates to fill specific employment needs. Private institutions' endowment support has been particularly threatened by an increasing proportion of corporate donations going to public institutions (McMillen, 1989; Baumann, 1989).

Public institutions have also felt revenue pinches from state appropriation trimmings in several states. New York, Connecticut, and Massachusetts present examples of public college systems that have recently faced large budget cuts. Cutbacks in the primary revenue source of public institutions in these states may threaten the job security of college and university personnel, and have also raised the specter of higher tuition, restricted enrollment, and equipment shortages (Blumenstyk, 1989).

Tighter non-tuition income sources for higher education institutions, combined with the sharply escalating costs outlined above, have contributed to growing pressures to increase college tuitions. Some critics allege that colleges have become too dependent on external support, and tax dollar subsidies in particular. However, many college advocates argue that higher tuitions are the only means to ensure quality education in the absence of financial support from other

revenue sources. Chapter IV explores these issues in a comparison of institutions' tuition and fee revenues, non-tuition and fee revenues, and expenditures.

Prestige Pricing

The Dean of the Faculty at Mount Holyoke College, Joseph Ellis, calls it the "Chivas Regal" theory. David Breneman, economist and former president of Kalamazoo College, calls it "prestige pricing." However it is labeled, proponents of this theory argue that the prices of college tuitions are determined by perceptions of quality. Ellis believes that students and their families associate quality with price, just as many people associate good scotch with high prices (Fiske, 1988). According to Breneman, "Right or wrong, price is a message to the public of what we are. I do nothing for my college if I am a good citizen and I raise tuition only 5 percent" (Breneman quoted in Streitfeld, 1988). So, to maintain and build their images as prestigious institutions, colleges raise their tuitions to those of comparable institutions. Institutions can then use the money generated from higher tuition revenue to expand their academic and extracurricular offerings. Such improvements may give a college or university a marketable advantage when competing with other institutions for students.

Many observers note that prestige pricing has intensified in recent years. Gettysburg College president Charles E. Glassik believes that, beginning in the early 1980s, "It became clear that young people were seeing college as an investment and that price was less important than result" (Glassik quoted in Berger, 1988). Indeed, a Gallup Poll revealed that between 1978 and 1985, the percentage of Americans who believe a college education is very important jumped from 35 percent to 65 percent (Fiske, 1987). Students and their families are willing to spend the extra money if they are convinced that a degree from a specific institution will later "pay for itself" in earnings, opportunity, and prestige.

Recent reports do indicate rapidly increasing returns to higher education. Whereas during the 1970s the income of college graduates was between 15 and 20 percent higher than that of high school graduates, by 1986 the income of college graduates was 49 percent higher than that of persons with only a high school diploma (Vobejda, 1989). Such trends have led to speculation

that increasing returns to an investment in higher education makes it easier for colleges to raise their tuitions.

Some critics have attacked colleges and universities as greedy and unwilling to cut costs, charging whatever the market will bear. Critics also accuse institutions of undermining the conventional workings of supply and demand by relying on government subsidies to protect them from normal market price thresholds, and also by engaging in collusion. The same colleges that compete fiercely with each other for the best students, and which have been criticized for their extravagant marketing and recruitment ploys, often swap information and intentions pertaining to tuition levels prior to setting new tuition figures (Fiske, 1987; Putka, 1989). The Justice Department has also launched a formal investigation of colleges that consult with one another regarding financial aid offers for prospective students (Johnston, 1989; Barrett and Chipello, 1989).

Bowen's "'Laws' of Higher Educational Costs"

Many of the explanations of tuition increases elaborated above, currently made by both critics and supporters of recent tuition increases, were summarized succinctly by Howard Bowen shortly before tuitions entered their current fast-paced climb (Bowen, 1980). In a seminal work on higher education costs published in 1980, he posited what he termed the "'Laws' of Higher Educational Costs." These "laws" are:

1. The dominant goals of institutions are educational excellence, prestige, and influence.
2. In quest of excellence, prestige, and influence, there is virtually no limit to the amount of money an institution could spend for seemingly fruitful educational ends.
3. Each institution raises all the money it can.
4. Each institution spends all the money it can.
5. The cumulative effect of the preceding four laws is toward ever-increasing expenditure. (Bowen, 1980; pp. 19-20)

In short, institutions will generate as much revenue as they can and find ways to spend whatever they have. Tuition revenue is no exception in this scheme. According to Bowen, limits to ever increasing costs will not be imposed by institutions themselves, but rather by legislators and students and their families. But if segments of the general public will pay whatever institutions charge, then the motivation to lower tuitions or curtail their growth is minimal.

The remainder of this report examines the expenditure and revenue patterns of different types of higher education institutions in an attempt to determine how the explanations outlined in this chapter contribute to rising college costs. Wherever data permit, analyses differentiate between the public and private sectors to help determine whether certain explanations are more pertinent to one sector than to the other.

CHAPTER IV

EXPENDITURE AND REVENUE TRENDS

This chapter examines expenditure and revenue trends to provide a broad overview of where public and private institutions get their funds, and how they spend their money. The trend data also point out the categories in which expenditures and revenues have changed most dramatically. Some of the major findings from this analysis are summarized below: (All figures and comparisons are based on constant dollars.)

Expenditures

- *Education and general expenditures per FTE increased at similar rates, approximately 20 percent, in public and private higher education institutions between 1975-76 and 1985-86.*
- *Administrative expenditures grew considerably faster than overall expenditures in both sectors, increasing 31 percent among public institutions and 36 percent among private institutions.*
- *Expenditures on institutional scholarships grew substantially at private schools (35 percent), but decreased slightly among public institutions.*

Revenue

- *Overall revenue per FTE grew approximately 18 percent between 1975-76 and 1985-86 in both public and private institutions.*
- *Tuition and fee revenue grew faster than total revenue in both sectors: 28 percent among private institutions and 36 percent for public institutions.*
- *Revenue growth in government grants and contracts and government appropriations was slow in public institutions, and revenue from these sources actually declined in private institutions.*

Composition of Expenditures and Revenues

Understanding why tuitions have increased requires an understanding of where higher education institutions get their money from and the types of expenses these institutions incur. Expenditure and revenue data are available through the Higher Education General Information

Survey (HEGIS), which gathered yearly information on nineteen different revenue categories and eighteen different expenditure categories. This report uses only those categories that comprise what is known as "education and general (E & G) expenditures" and "general education revenues." This methodology excludes from the analysis expenditures and revenues such as hospitals and student housing which can vary considerably across institutions. Many schools do not provide on-campus housing, and most do not have hospitals. Limiting the analysis to education and general expenditures thus enhances comparability across institutions.

The key expenditure categories examined in this report are: academic, administrative, scholarships, plant operation, research, and other (which includes public service and mandatory educational transfers). The revenue categories used are: tuition and fees, government (Federal, state and local) appropriations, government grants and contracts, private gifts and contracts, endowment income, and sales and services for educational activities. The components of the expenditure and revenue categories are summarized in Exhibit IV-1.

As indicated in Exhibit IV-2, in 1985-86 private institutions, on average, spent $11,098 per full-time equivalent (FTE) student, while public institutions spent $7,630. Although the private institutions spent considerably more money per student, the distribution of this money across expenditure categories was remarkably similar to that of public institutions.

In both sectors, academic and administrative expenditures together accounted for approximately two-thirds of all E & G expenditures. Academic expenditures were the largest single expenditure for both types of institutions, comprising 46 percent of all education and general expenditures in the public sector and 40 percent in the private sector. Administrative expenditures ranked second in both sectors. Public institutions spent 23 percent of their

EXHIBIT IV-1

Expenditure and Revenue Categories

EDUCATIONAL AND GENERAL EXPENDITURES

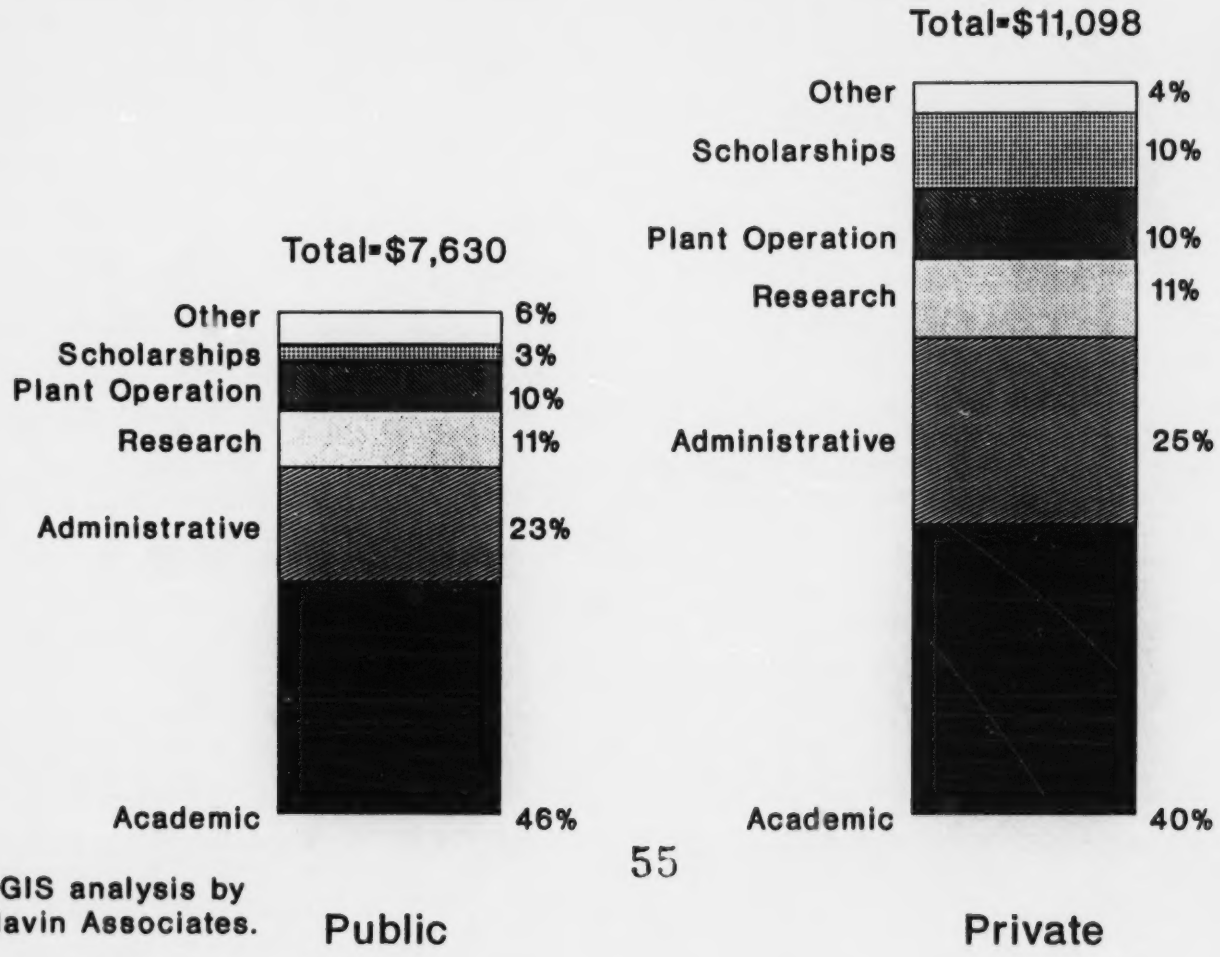
Category	Components
Academic	Instruction Libraries
Administrative	Student Services Institutional Support Academic Support
Scholarship	Externally-funded Scholarships and Grants Internally-funded Scholarships and Grants
Plant Operation	Operation and Maintenance of Physical Plant
Research	Externally-funded Research Internally-funded Research
Other	Public Service Mandatory Educational Transfers

GENERAL EDUCATION REVENUE

Category	Components
Tuition and Fees	Tuition and fee payments by students, as well as tuition remissions and exemptions
Government Appropriations	Federal State Local
Government Grants & Contracts	Federal, Restricted and Unrestricted State, Restricted and Unrestricted Local, Restricted and Unrestricted
Private Gifts, Grants & Contracts	Restricted Unrestricted
Endowment Income	Restricted Unrestricted
Sales and Services of Educational Activities	

Exhibit IV-2

Expenditures per FTE Student
in 1985-86



HEGIS analysis by
Pelavin Associates.

education and general funds on administrative matters, while private schools spent 25 percent of their money for this purpose.

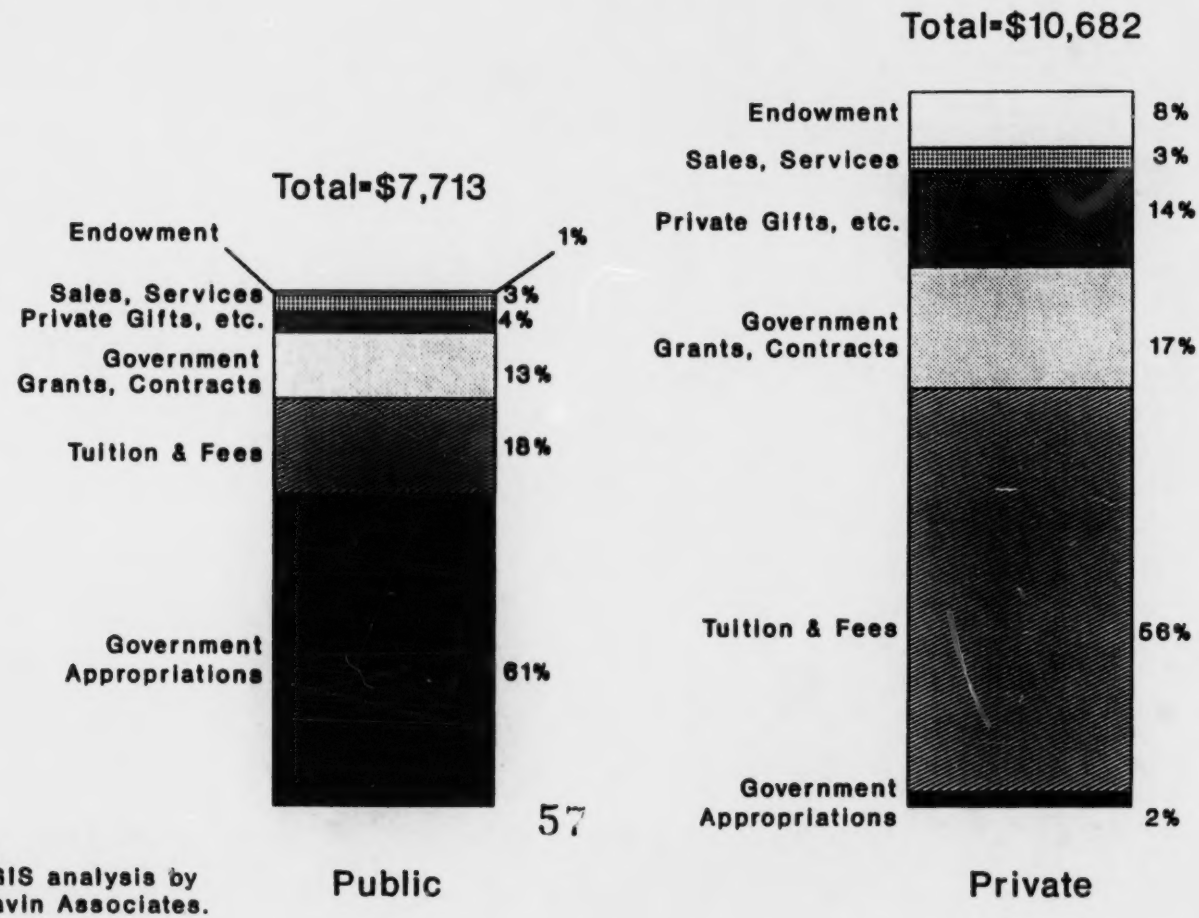
Most other types of expenditures were also similar across the two sectors but comprised much smaller components of overall E & G expenditures. In both sectors, ten percent of all education and general expenditures went toward plant operation and maintenance, and eleven percent toward research. Private schools did use a larger proportion of their education and general funds for scholarships (ten percent) than did public schools (three percent).

Despite the similarities in the distribution of funds for educational and general expenditures, the sources of revenue to cover these expenses differ considerably between the public and private sectors. In both types of institutions, the cost of providing higher education greatly exceeds the tuition and fees paid by students. However, the difference between cost and tuition is far greater in the public sector than in the private sector. As shown in Exhibit IV-3, tuition and fee revenues comprised over half (56 percent) of all general education revenue in the private sector in 1985-86, but less than a fifth (18 percent) of all such revenue in the public sector.

The primary source of revenue for public sector institutions is government (primarily state and local) appropriations. Sixty-one percent of public institutions' revenue derives from this source, while only two percent of the average private institution's revenue came from this source.

The contribution of private gifts, grants and contracts to total revenue is another difference worth noting between the two sectors. Fourteen percent of total revenue for private schools came from this source in 1985-86; private gifts, grants and contracts provided only four percent of total revenue for public institutions. Private institutions also received more endowment income per student.

Exhibit IV-3
Revenues per FTE Student
in 1985-86



HEGIS analysis by
Pelavin Associates.

Private schools received eight percent of total revenue from endowment income, while public schools received only one percent of all revenue from this source.

Expenditure Trends

Between 1975-76 and 1985-86, trends in education and general expenditures basically paralleled tuition trends. Like tuition, E & G expenditures remained fairly constant between 1975-76 and 1980-81 in both public and private institutions. Then, between 1980-81 and 1985-86, real expenditures increased in both sectors and in every individual category except "other" in the public sector. Exhibit IV-4 presents expenditure data for the 1975-76, 1980-81, and 1985-86 academic years for both public and private institutions. To facilitate comparisons across all three time periods, data are presented in constant 1985 dollars.

In both sectors, total real E & G expenditures grew approximately 19 percent between 1975-76 and 1985-86. The two largest expenditure categories -- academic and administrative -- experienced the largest real dollar increases. Academic expenditures grew by $426 per FTE student (14 percent) at the average public institution and $418 per FTE (10 percent) at the average private institution. Administrative was the fastest growing expenditure category in both sectors, growing $410 per FTE (31 percent) among public institutions and $755 per FTE (36 percent) among private institutions. This similarity should not obscure the large difference in dollars spent per student in the two sectors. By 1985-86, for example, private schools spent $868 (24.5 percent) more per FTE student than did public institutions on academic matters. On administrative expenditures, private colleges and universities spent $1,088 (63 percent) per student more than did public schools.

EXHIBIT IV-4

Trends in Educational and General Expenditures in Institutions of Higher Education: 1975-76, 1980-81, and 1985-86

	Expenditures per FTE Student in Constant 1985-86 Dollars			Percent Change	
	1975-76	1980-81	1985-86	1975-76 to 1980-1981	1980-81 to 1985-1986
PUBLIC:					
Academic	$3,108	$3,033	$3,534	-2.4%	16.5%
Administrative	1,329	1,391	1,739	4.7%	25.0%
Scholarships	240	201	236	-16.3%	17.4%
Plant Operation	649	696	776	7.2%	11.5%
Research	648	721	856	11.3%	18.7%
Other	424	420	488	-0.9%	-2.9%
Total E & G	6,398	6,463	7,630	1.0%	18.1%
PRIVATE:					
Academic	$3,984	$3,726	$4,402	-6.5%	18.1%
Administrative	2,072	2,216	2,827	6.9%	27.6%
Scholarships	839	831	1,136	-1.0%	36.7%
Plant Operation	926	963	1,067	4.0%	10.8%
Research	1,135	1,065	1,201	-6.2%	12.8%
Other	375	377	466	0.5%	23.6%
Total E & G	9,330	9,178	11,098	-1.6%	20.9%

HEGIS analysis by Pelavin Associates.

Despite large dollar amount increases in academic expenditures per FTE between 1975-76 and 1985-86, academic expenditures decreased slightly as a proportion of total expenditures, while administrative expenditures increased slightly in both sectors relative to total expenditures. These trends are summarized in the bar charts presented in Exhibit IV-5, which compare expenditure growth in constant dollars between the 1975-76 and 1985-86 academic years in both sectors. Academic expenditures decreased by approximately three percent in their total budget share, from 49 to 46 percent in the public sector, and from 43 to 40 percent in the private sector. Administrative expenditures grew from 21 to 23 percent of total expenditures per FTE at public institutions, and from 22 to 25 percent of total expenditures per FTE at private institutions.

The category in which expenditure patterns differ most between the two sectors is scholarships. Throughout this ten year period, scholarships accounted for a larger proportion of total expenditures in private institutions (10 percent in 1985-86) than in public (three percent in 1985-86). Moreover, in private institutions, this expenditure grew 35 percent between 1975-76 and 1985-86, while in public schools, this expenditure actually decreased slightly (two percent) in real terms over the same period.

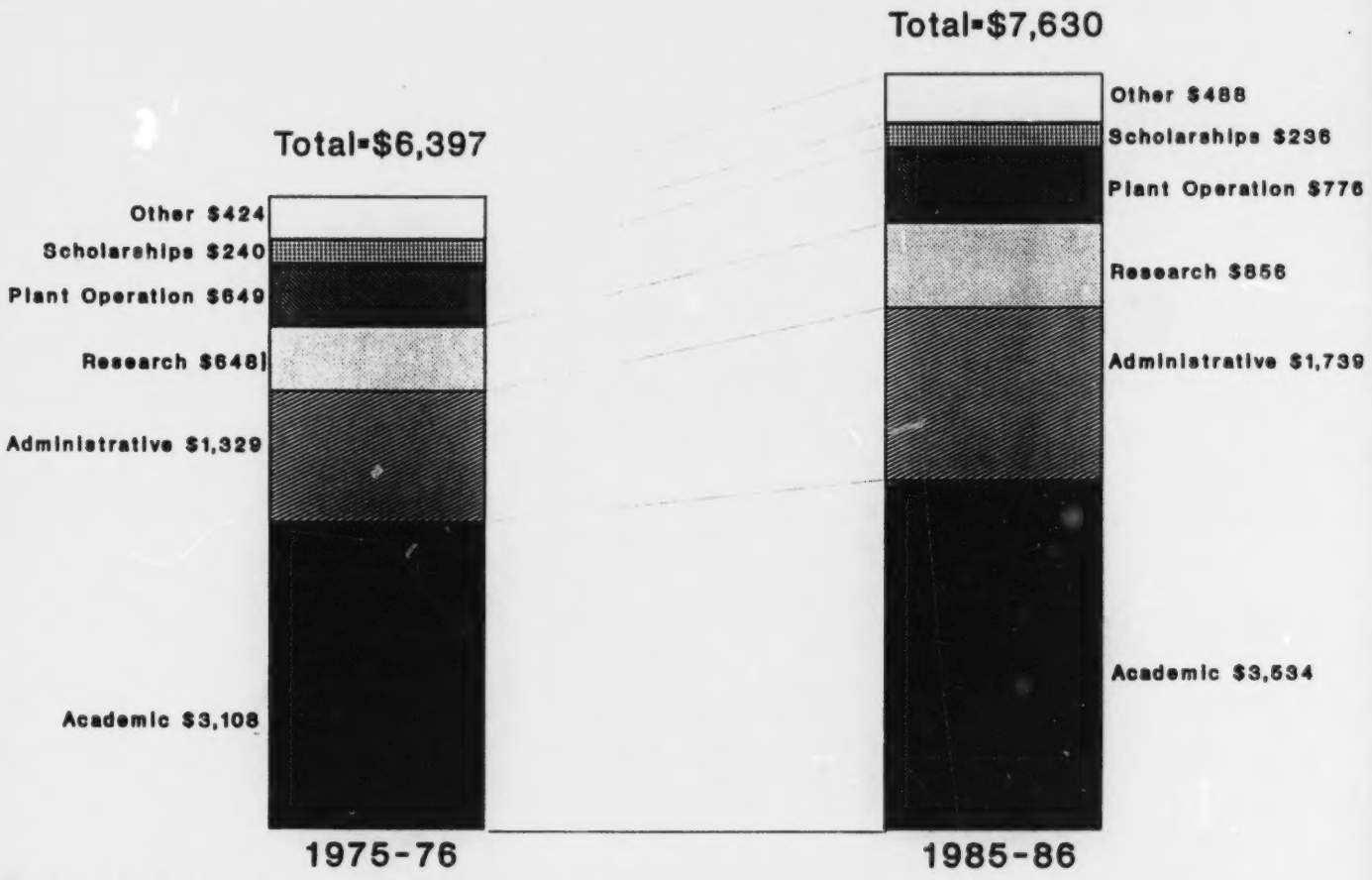
Revenue Trends

Exhibit IV-6 compares general education revenue of public and private institutions for the academic years 1975-76, 1980-81, and 1985-86. In both sectors, total revenue remained remarkably steady between 1975-76 and 1980-81. Then, in the first half of the 1980s, general education revenue increased by almost 20 percent in both public and private schools.

Exhibit IV-5

Expenditure Growth per FTE Student: Public

1975-76 to 1985-86
in Constant 1985-86 Dollars

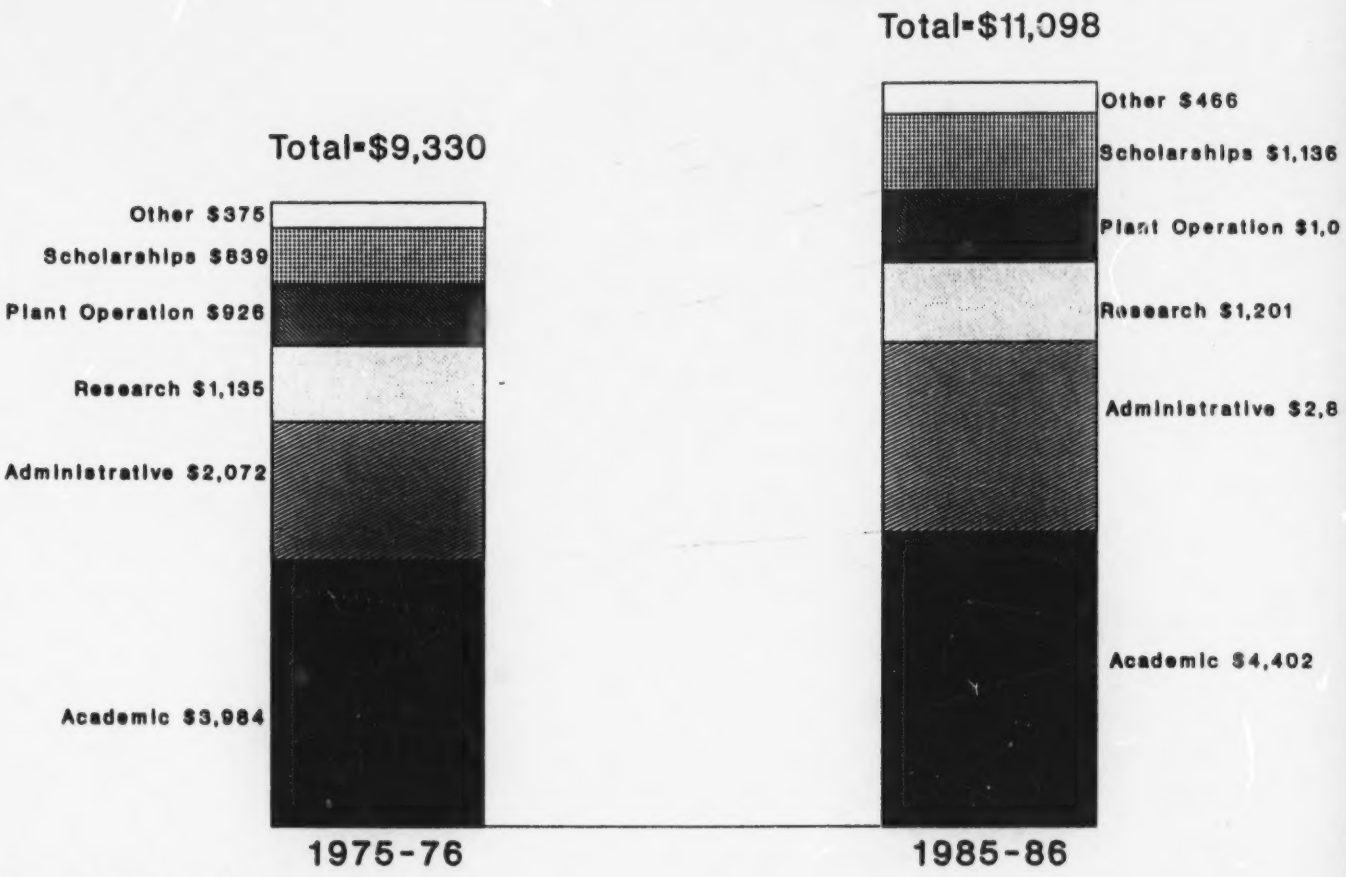


HEGIS analysis by Pelavin Associates.

Exhibit IV-5 (Continued)

Expenditure Growth per FTE Student: Private

1975-76 to 1985-86
in Constant 1985-86 Dollars



HEGIS analysis by Pelavin Associates.

EXHIBIT IV-6

Trends in General Education Revenues in Institutions of Higher Education: 1975-76, 1980-81, and 1985-86

	Revenue per FTE Student in Constant 1985 Dollars			Percent Change	
	1975-76	1980-81	1985-86	1975-76 to 1980-1981	1980-81 1985-1986
PUBLIC:					
Tuition & Fees	$1,045	$1,054	$1,416	.9%	34.3%
Government Appropriations					
Federal	235	213	156	-9.4%	-24.7%
State & Local	3,903	3,875	4,532	-.7%	17.0%
Government Grants					
Federal	848	821	795	-3.2%	-3.2%
State & Local	143	154	199	7.7%	29.2%
Private Gifts	185	208	316	12.4%	51.9%
Endowment	29	41	60	41.4%	46.3%
Sales & Services of Ed. Activities	127	179	240	40.9%	34.1
Total	6,516	6,544	7,713	.4%	17.9%

HEGIS analysis by Pelavin Associates.

EXHIBIT IV-6

Trends in General Education Revenues in Institutions of Higher Education: 1975-76, 1980-81, and 1985-86
(continued)

	Revenue per FTE Student in Constant 1985 Dollars			Percent Change	
	1975-76	1980-81	1985-86	1975-76 to 1980-1981	1980-81 to 1985-1986
PRIVATE:					
Tuition & Fees	$4,702	$4,734	$6,010	0.7%	27.0%
Government Appropriations					
Federal	125	126	95	0.8%	-26.8%
State & Local	175	152	147	-13.1%	-3.3%
Government Grants					
Federal	1,689	1,610	1,560	-4.7%	-3.1%
State & Local	240	193	253	-19.6%	31.1%
Private Gifts	1,303	1,199	1,451	-8.0%	21.0%
Endowment	591	664	825	12.4%	24.2%
Sales & Services of Ed. Activities	222	269	341	21.2%	26.8%
Total	9,047	8,948	10,682	-1.1%	19.4%

HEGIS analysis by Pelavin Associates.

Both sectors experienced increases in tuition and fee revenue in the first half of the 1980s. This finding is consistent with data presented in Chapter II on undergraduate tuition charges.[1] Tuition revenue also increased as a proportion of total revenues between 1975-76 and 1985-86 -- from 16 to 18 percent in the public sector, and from 52 to 56 percent in the private sector. Thus, colleges and universities depended more on tuition as a source of revenue in 1985-86 than they did ten years earlier.

Revenues from Federal sources decreased between 1975-76 and 1980-81. Federal grants, which comprised 13 percent of all general education revenue for public institutions in 1975-76, fell to 10 percent of total revenue ten years later. In 1985-86 dollars, this represented a decrease from $848 to $795 per FTE. A similar decline occurred in private institutions, with Federal grants falling from 19 to 15 percent of all revenue across this time period, or from $1,689 to $1,560 per FTE in constant 1985-86 dollars. This decline was fairly evenly spread over the two five year periods.

Between 1980-81 and 1985-86, the public sector received considerable increases from its principal revenue source, state and local appropriations. Over this interval these revenues grew 17 percent, from $3,875 to $4,532 per FTE in constant 1985-86 dollars. Although the private sector received a very small portion of its revenue from state and local appropriations (on average, only two percent in 1975-76), there was a real decline in revenue from this source per FTE student to private schools in both time periods. By 1985-86 only one percent of total revenue of private institutions came from this source.

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[1]The total tuition and fee revenue per FTE student at an institution will differ somewhat from the tuition charged to undergraduate students reported in Chapter II. This is because tuition and fee revenue includes the tuition money collected from undergraduates, graduates, and first professional students, as well as any other categories the institution may use to differentiate tuitions. Tuition and fee revenue also includes tuitions from part-time students, as well, though the actual tuition charged to students taking less than a full course load cannot be determined from the data. A number of different fees are also included in the tuition and fee revenue category, such as fees for laboratory courses and computer usage. Neither HEGIS nor IPEDS data distinguish between the tuition and fee revenue that results from different students and for different purposes.

Endowment income per FTE increased for both public and private institutions. Although endowment income contributed a very small portion of total revenues (one percent in 1985-86) in the public sector, in the private sector endowment income per student increased steadily from $591 in 1975-76 (6.5 percent of total revenue) to $664 in 1980-81 (7.4 percent of total revenue) to $825 in 1985-86 (7.7 percent of total revenue).

Revenue trends in the public and private sectors are summarized in the bar charts in Exhibit IV-7. These charts illustrate the growth in overall revenue (approximately 18 percent in both sectors) and in specific revenue components. In both the public and private sectors, tuition and fee revenue grew faster than revenue overall. Endowment revenue, although a small proportion of the total, increased dramatically in both sectors. On the other hand, revenue from government grants and contracts increased only very slightly in the public sector and actually decreased by approximately six percent among private institutions. Federal appropriations also decreased in both the private and public sectors.

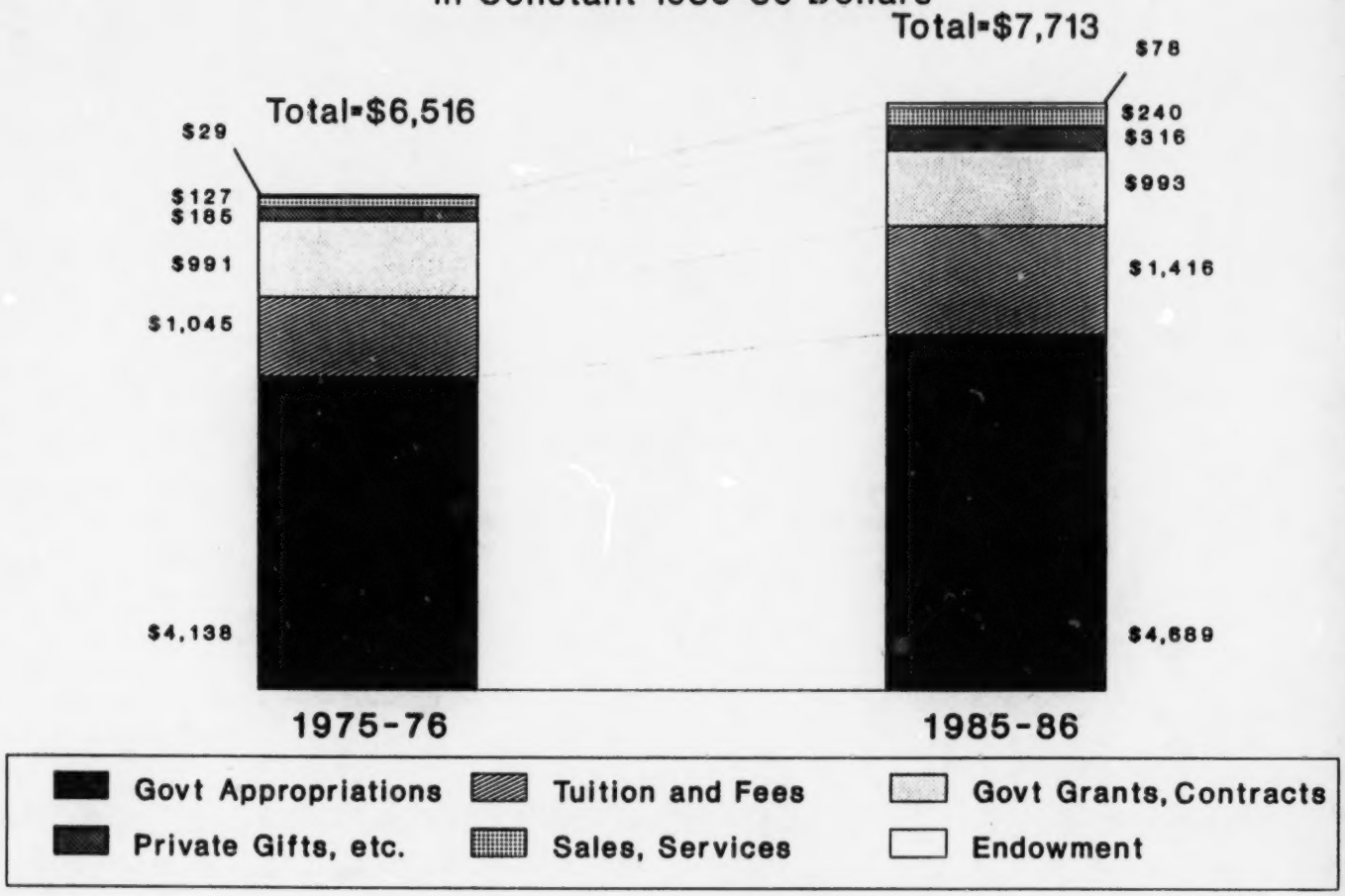
The tuition/expenditure relationship can be examined by calculating what tuition would have been in a given year if it had increased at the same rate as E & G expenditures. Between 1975-76 and 1980-81, tuition and expenditures grew at similar rates. Thus, actual tuition in 1980-81 very nearly equalled what tuition would have been had it grown at the rate of expenditures during this period. The interval from 1980-81 to 1985-86, however, tells a different story. During this period, tuition and fee revenue grew considerably faster than E & G expenditures, so that actual tuition in 1985-86 was higher than what it would have

Exhibit IV-7

Revenue Growth per FTE Student: Public

1975-76 to 1985-86

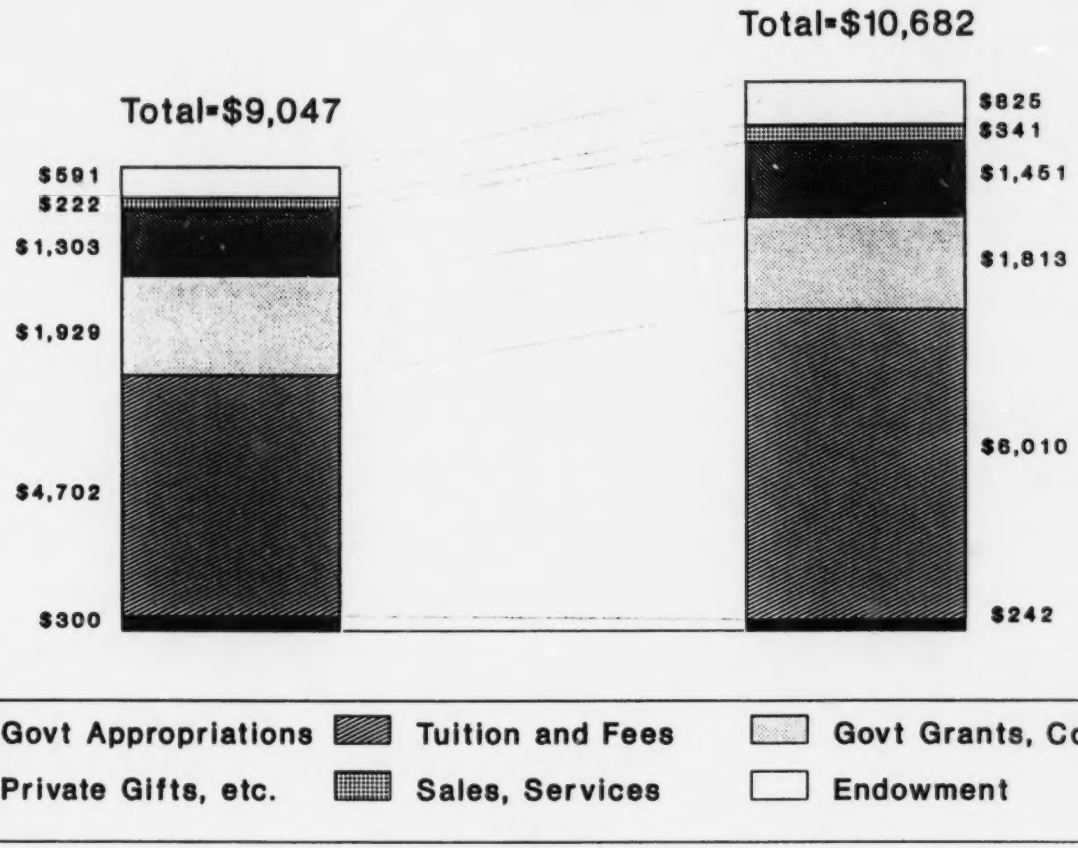
in Constant 1985-86 Dollars



HEGIS analysis by Pelavin Associates.

Exhibit IV-7 (Continued)

Revenue Growth per FTE Student: Private
1975-76 to 1985-86
in Constant 1985-86 Dollars



HEGIS analysis by Pelavin Associates.

been had it grown at the rate of expenditures during these five years. This resulted in a "surplus" of tuition and fee revenue that cannot be attributed to expenditure growth.

From such findings, many higher education analysts have concluded that tuition and fee increases during the 1980s not only "covered" expenditure growth, but also compensated for slower growth from other revenue sources. Indeed, non-tuition and fee revenue grew slower than both expenditures and tuition and fee revenue during the 1980s. Therefore, in contrast to the tuition "surplus," there was a non-tuition and fee "shortfall" relative to the amount needed to keep pace with expenditure growth.

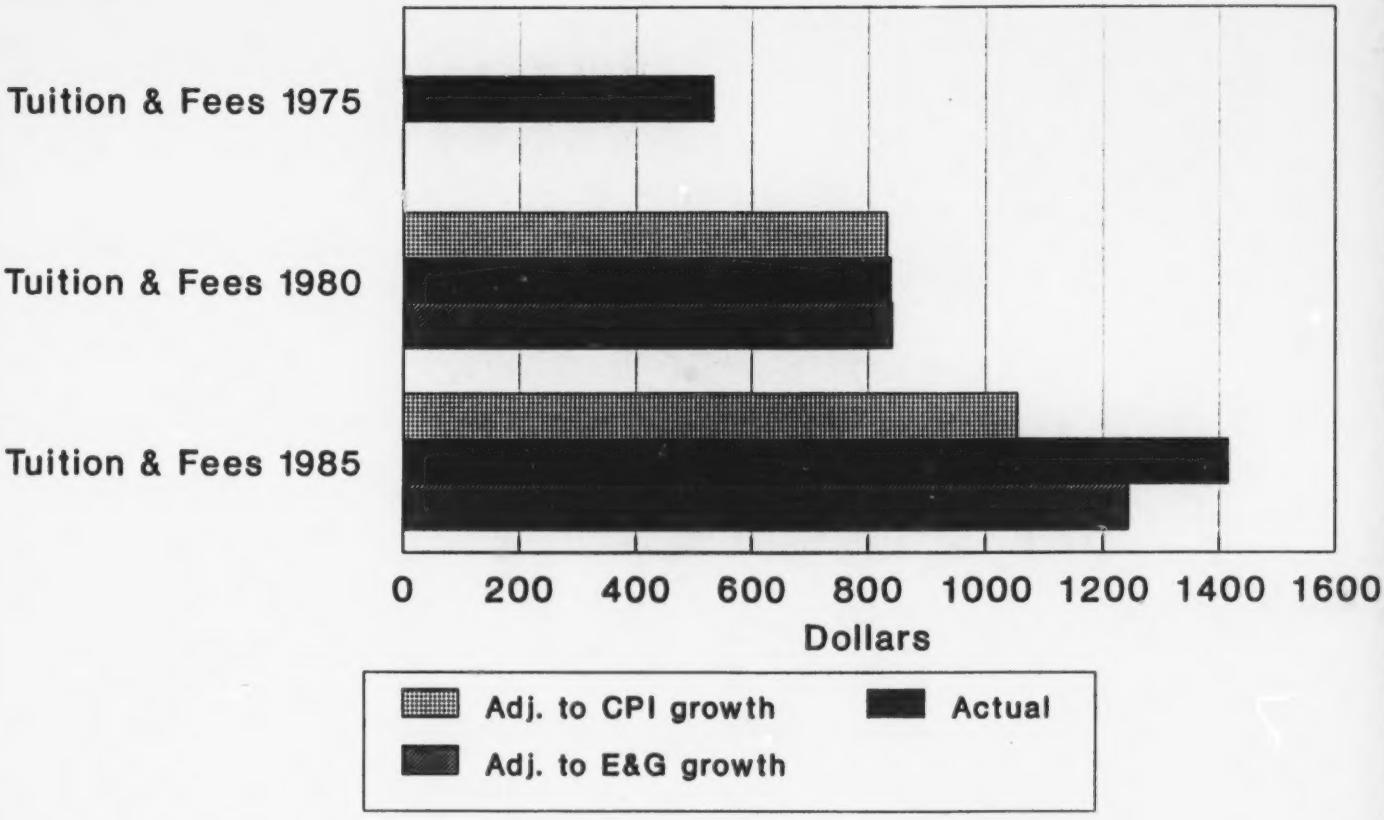
This analysis is illustrated in Exhibits IV-8 through IV-11. Exhibits IV-8 and IV-9 present bar charts comparing actual tuition and fee revenue growth with tuition and fee revenue growth adjusted to the rate of expenditure growth for the public and private sectors. Exhibits IV-10 and IV-11 are similar charts, comparing actual non-tuition and fee revenue to the non-tuition and fee revenue adjusted to the expenditure growth rate for each sector. Both sets of charts also include revenue growth adjusted to the CPI for comparative purposes.

These charts illustrate the following with respect to public institutions:

- In 1975-76, tuition and fee revenue per FTE was $533.
- By 1980-81, tuition and fee revenue per FTE had increased to $839.
- If tuition and fee revenue had increased at the same rate as E & G expenditures between these two time periods, tuition and fee revenue per FTE would have been $841.
- If tuition and fee revenue had grown at the same pace as inflation, this revenue would have been $832.

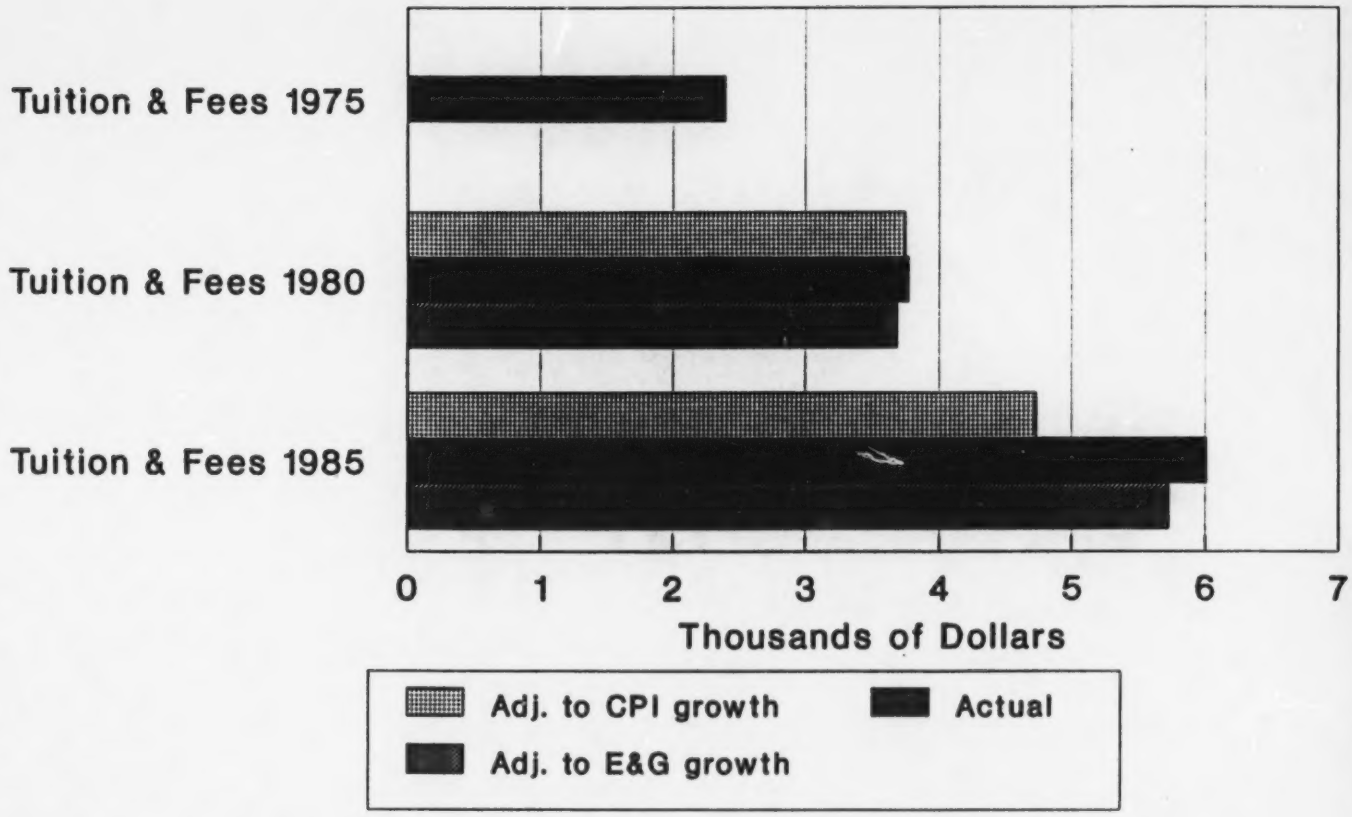
Exhibit IV-8

Growth in Tuition & Fee Revenue per FTE Student
Public Institutions



HEGIS analysis by Pelavin Associates.

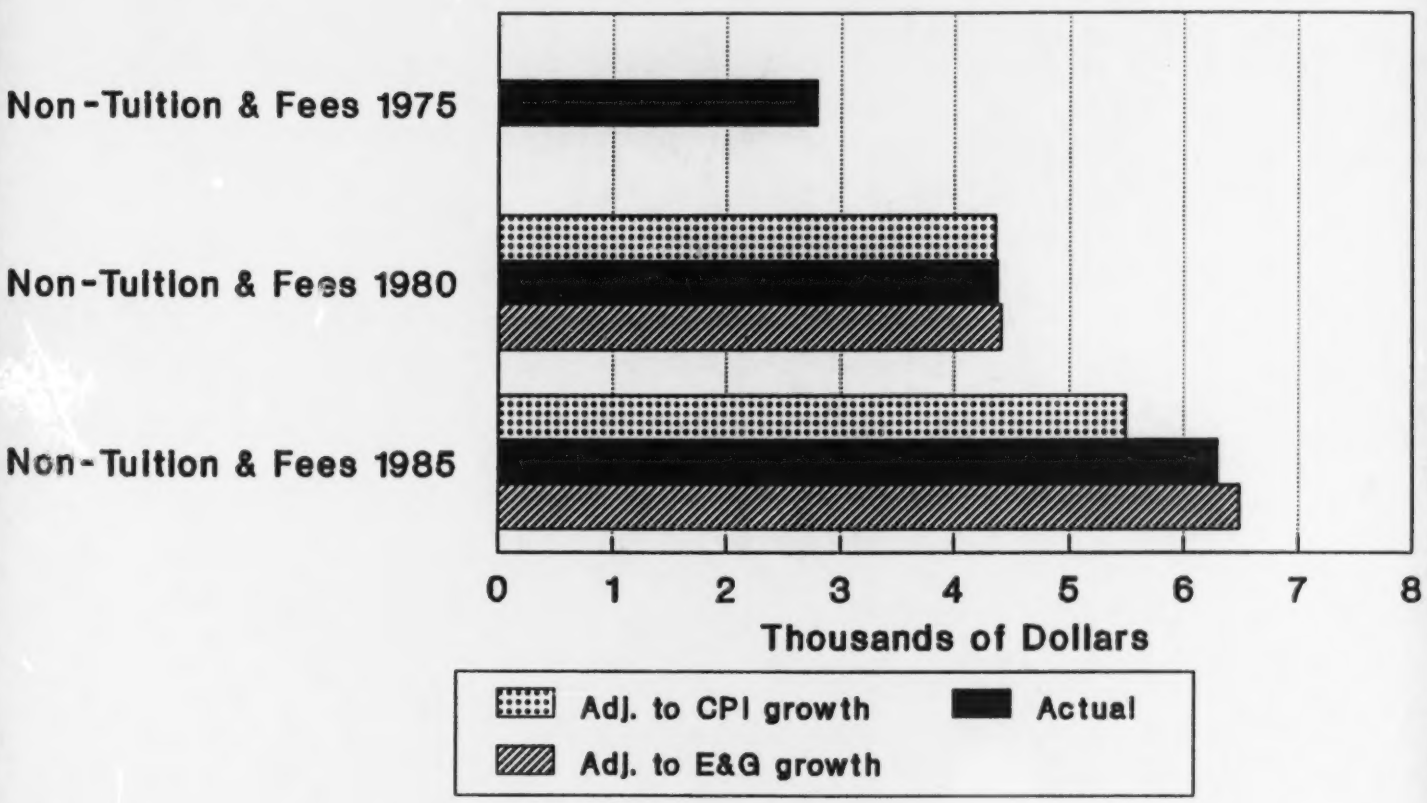
Exhibit IV-9
Growth in Tuition & Fee Revenue per FTE Student
Private Institutions



HEGIS analysis by Pelavin Associates

Exhibit IV-10

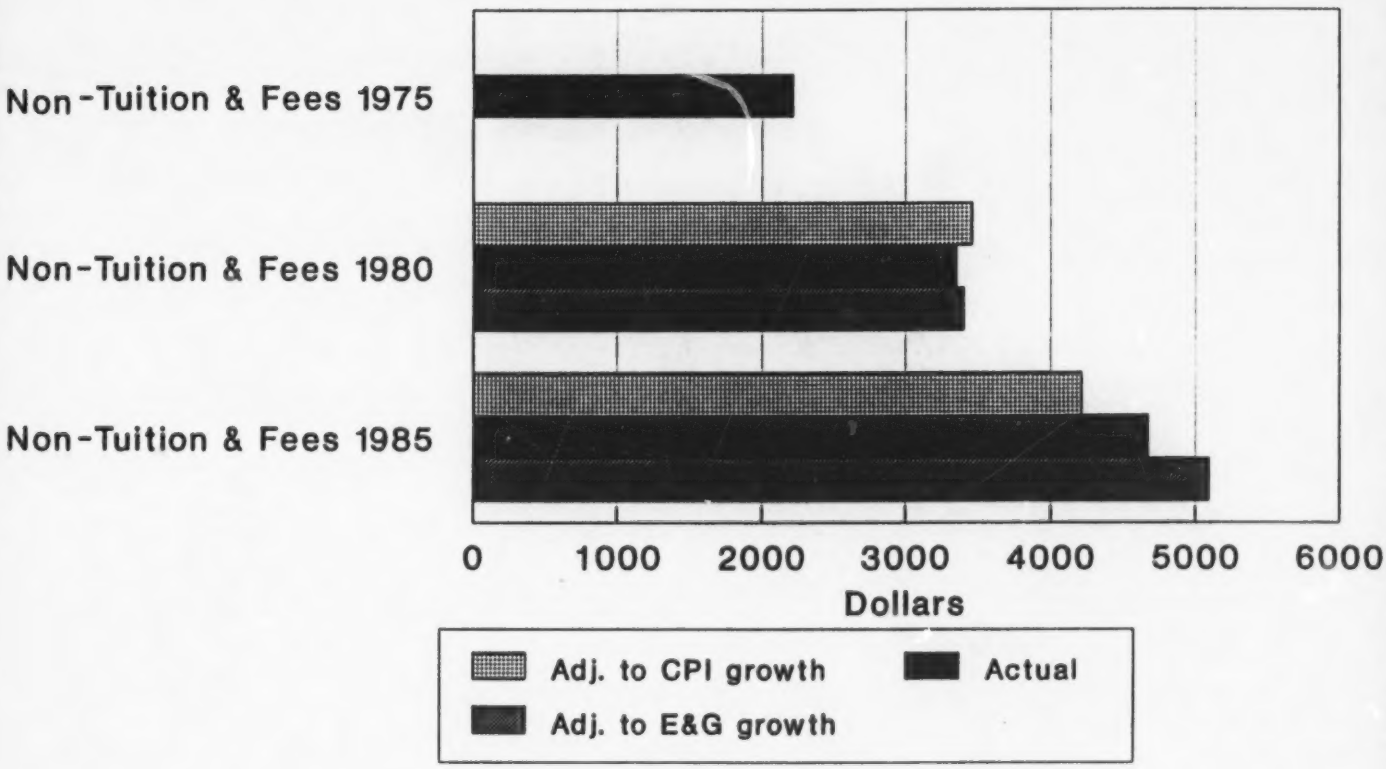
Growth in Non-Tuition and Fee Revenue per FTE Student Public Institutions



HEGIS analysis by Pelavin Associates.

Exhibit IV-11

Growth in Non-Tuition and Fee Revenue per FTE Student Private Institutions



HEGIS analysis by Pelavin Associates.

Thus, between 1975-76 and 1980-81, tuition grew at almost identical rates to both E & G expenditures and the CPI.

Although the dollar amounts are obviously much larger, similar rates of increase occurred for private institutions over the same five-year interval. Tuition and fee revenue per FTE adjusted to the rate of growth of E & G expenditures between 1975-76 and 1980-81 ($3,681) and adjusted to the CPI ($3,742) during the same interval are both within $100 of actual tuition and fee revenue in 1980-81 ($3,768).

Increases between the 1980-81 and 1985-86 academic years, however, reflect very different trends. In the average public institution:

- Between 1980-81 and 1985-86, tuition and fee revenue per FTE increased from $839 to $1,416.
- If tuition revenue had grown at the same pace as E & G expenditures, tuition and fee revenue per FTE would have increased to $1,244 in 1985-86, or $172 less than it actually grew.
- If tuition revenue had grown at the rate of inflation, tuition revenue would have increased to $1,054, or $362 less than it actually was in 1985.

At public institutions, therefore, tuition and fee revenue increased faster than both E & G spending and the CPI between 1980-81 and 1985-86.

The private sector tells a similar story. At the average private institution, tuition and fee revenue per FTE was $6,010 in 1985-86. Had it increased at the rate of E & G spending growth, it would have been $5,725; had it grown at the same rate as the CPI, it would have been $4,734. Thus, in both the public and private sectors there was a "surplus" of tuition and fee revenue over E & G growth in the 1980-81 to 1985-86 period.

Non-tuition and fee revenue, in contrast, increased less rapidly than E & G spending between 1980-81 and 1985-86, as shown in Exhibits IV-10 and IV-11. In sharp contrast to the "surplus" found in tuition and fee revenue, non-tuition and fee revenue was less than it would have needed to be to keep up with E & G spending growth over the 1980-81 to 1985-86

period. Growth in non-tuition and fee revenue at the rate of E & G spending growth over this period would have raised non-tuition and fee revenue per FTE to $6,481 by 1985-86 at public institutions; the actual figure for this year was only $6,297. Thus, at public institutions there was a $184 "shortfall" in non-tuition and fee revenue relative to E & G expenditure growth. At the average private institution, non-tuition and fee revenue in 1985-86 was $423 less than it would have been had this revenue grown at the rate of E & G expenditures. This analysis suggests that tuition and fee revenue may have risen faster than E & G expenditures during the first half of the 1980s in part to compensate for revenue shortfalls from other sources.

Enrollment Changes and Budget Changes

In addition to changes in institutional expenditure and revenue trends, enrollments can also affect cost. Institutions often experience changes in the numbers of students served, which could affect how per-student costs are distributed.

Most research on economies of scale in higher education compares similar types of institutions (e.g., two-year or four-year, liberal arts or research) with different enrollment sizes in order to determine whether larger schools have lower per-unit costs than smaller schools. This research also frequently attempts to identify those areas in which costs are most likely to be reduced, e.g., administrative, academic, etc. (Brinkman and Leslie, 1986).

A recent study related expenditure growth per FTE to aggregate expenditure growth in higher education institutions. The study found that during periods of growing enrollments, aggregate expenditures grew faster than expenditures per FTE. This was attributed to the ability of institutions to spread costs over an increasing student population. As college enrollments leveled in the 1980s, institutions were no longer able to spread out their increasing costs (Hauptman, 1989).

The approach used in this report to examine the relationship between size and costs varies somewhat from that of other research. The question addressed in this analysis is:

> Do the expenditure patterns of institutions which have experienced enrollment growth differ from those of institutions which have not grown?

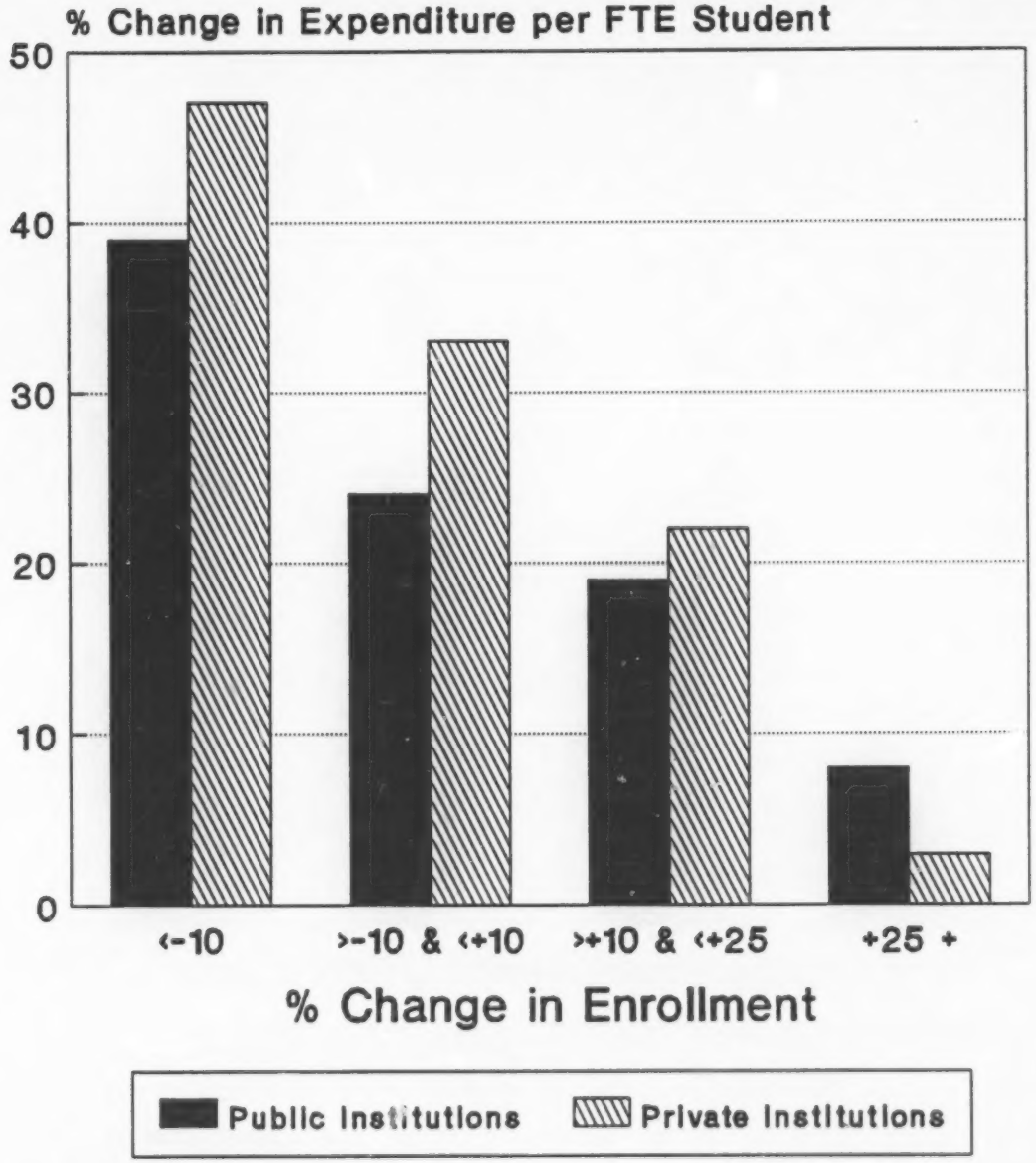
Exhibits IV-12 and IV-13 provide additional information on the relationship between enrollment and expenditure growth. Exhibit IV-12 graphs percentage change in total expenditures per FTE student by these different enrollment growth categories. Exhibit IV-13 provides more detailed data pertaining to changes in academic and administrative expenditures as well as total education and general expenditures for schools with different enrollment growth patterns.

In both public and private four-year institutions, total per-student E & G expenditures increased fastest in those schools with enrollment declines. E & G expenditures per FTE increased by only eight percent between 1975-76 and 1985-86 in those public colleges and universities that experienced enrollment increases of 25 percent or more. At the other extreme, public schools with enrollment declines of 10 percent or more had an increase in E & G expenditures per FTE of 39 percent. Growth in E & G spending for public institutions with enrollment changes in the intermediate two categories fell in between: schools with enrollment growth between 10 and 25 percent experienced E & G spending growth of 19 percent, while schools whose enrollments basically remained steady had E & G spending growth of 24 percent.

The pattern among private four-year institutions is similar but more pronounced. Growth in E & G expenditures per FTE for private schools ranged from three percent among

Exhibit IV-12

Enrollment and Expenditure Growth Fall 1975 to Fall 1985



HEGIS analysis by Pelavin Associates.

EXHIBIT IV-13

Enrollment Changes and Expenditure Growth in Public and Private Four-Year Colleges and Universities: 1975-1985

	Enrollment Change			
	<-10%	>-10% & <+10%	>10% & < 25%	25% +
PERCENT CHANGE IN:				
Total E & G				
Public	39%	24%	19%	8%
Private	47%	33%	22%	3%
Academic				
Public	32%	19%	10%	4%
Private	33%	23%	19%	1%
Administrative				
Public	32%	24%	32%	15%
Private	54%	49%	29%	8%
Other				
Public	55%	31%	27%	11%
Private	62%	37%	23%	4%

SOURCE: Analysis by Pelavin Associates.

institutions with the highest enrollment increases to 47 percent among schools with largest enrollment declines.

Academic expenditures follow the same pattern as E & G expenditures in both public and private four-year schools. Those institutions with the greatest enrollment growth also had the smallest growth per FTE in academic expenditures; institutions with the least enrollment growth experienced the largest increases in academic expenditures per FTE. Indeed, increases in academic expenditures per student between 1975-76 and 1985-86 for schools whose enrollments increased 25 percent or more were minimal: four percent for public four-year schools and only one percent for private four-year institutions.

Administrative expenditures increased in a similar pattern across enrollment categories for private institutions. There is a considerable difference in expenditure growth per FTE between institutions with large enrollment increases and institutions with enrollment declines. Whereas at private four-year schools with enrollment increases of 25 percent or more, the average increase in administrative expenditures per FTE was only eight percent between 1975-76 and 1985-86, private schools with enrollment declines experienced a 54 percent increase in these expenditures during the same time period. The pattern among public institutions with different rates of enrollment growth is not as obvious, though. In public institutions, expenditure increases for administrative matters do not appear to be related to enrollment growth, although there is a difference between the two extreme categories.

Thus, for the most part, there appears to be an inverse relationship between enrollment growth and expenditure growth. That is, institutions with the largest percentage increase in enrollments appear to experience the smallest increases in expenditure growth.

Enrollment Changes and Tuition Changes

It is generally assumed that increased expenditures will result in increased tuitions. If this assumption is correct, and if enrollment growth actually helps curtail per student expenditure growth, enrollment growth might also help to limit tuition increases. Surprisingly, the relationships that emerged between enrollment changes and expenditure changes do not surface when enrollment changes and tuition changes are compared. Exhibit IV-14 compares enrollment changes to tuition increases between 1975-76 and 1986-87.[2] There is virtually no difference in tuition increases across any of the enrollment change categories for public institutions. Tuitions increased approximately 25 percent for these schools regardless of enrollment change. Among private institutions, those schools with the greatest enrollment increase do appear to have the smallest tuition increase of any enrollment category. However, there is not a corresponding increase in tuition as enrollment declines.

These data indicate a possible link between rates of enrollment increase and rates of per student expenditure increase: institutions with the largest enrollment increases generally experienced the smallest expenditure increases. However, a direct link between enrollments and tuitions does not emerge. These results call into question many common assumptions about the relationships among enrollments, expenditures, and tuitions. In particular, they question the fairly common premise that expenditure growth drives tuition growth. Further analysis of this issue is presented in The Escalating Costs of Higher Education.

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[2]The reader is reminded of the problems with HEGIS tuition data for the 1985-86 academic year. Thus, we present tuitions for 1986-87 even though the enrollment changes are for the ten year period between 1975-76 and 1985-86.

EXHIBIT IV-14

Enrollment Changes and Tuition Increases in Public and Private Four-Year Colleges and Universities: 1975-86

	Enrollment Change			
	≤-10%	>-10% & <+10%	>10% & < 25%	25% +
PERCENT CHANGE IN:				
Undergraduate Tuition				
Public	23%	26%	23%	25%
Private	46%	57%	48%	33%

SOURCE: Analysis by Pelavin Associates.

CHAPTER V

AN EXAMINATION OF EXPENDITURE GROWTH

As noted in Chapter III, many explanations for rising tuitions center around the goods and services that colleges and universities purchase. Of particular interest are the largest expenditure categories: academic and administrative. Expenditures in these categories appear to have grown for different reasons. The growth in academic expenses can be attributed largely to rises in the compensation -- including both salaries and benefits -- of full-time faculty at all ranks. Growth in instructional expenditures during the 1980s appears particularly dramatic because it follows a period of real dollar declines in faculty salaries in the 1970s.

The growth of administrative expenses, is more likely a result of the expanding functions and professionalization of this sector of higher education. Although the salaries of administrative personnel may have increased, administrative expenditures have also grown due to colleges assuming additional responsibilities, including sophisticated academic support programs, computing facilities, and student services. These new functions require not only capital outlay, but also increased numbers of non-teaching personnel to administer them.

Expansion of other expenditure categories such as financial aid and plant maintenance have contributed to overall expenditure growth, as well. The major trends in expenditure growth and composition appear in both the public and private sector data, suggesting that the recent developments in higher education spending noted in this chapter are widespread.

Background

This chapter examines data to help understand the forces that have contributed to the recent increases in expenditures by colleges. Particular attention is paid to academic and administrative expenditures, the largest and fastest growing expenditure categories, respectively. Categories of expenditures might increase over time either because the costs of providing services increase or because more of that service is being provided. For example, increasing computer expenditures are more likely the result of additional purchases of computers due to the rapid computerization of university life than increases in the price of computer equipment.

Academic Expenditures

Academic expenditures consist of two components:

- Libraries, which includes expenditures on books, periodicals and other costs of developing and maintaining college or university libraries; and
- Instruction, which is comprised of faculty compensation and other instruction-related expenditures.

Exhibit V-1 depicts the breakdown of these two expenditure components for public and private schools in 1975-76, 1980-81, and 1985-86 and their growth during this time period. Instructional expenses are by far the larger of these two components, comprising at least 90 percent of total academic expenditures in both public and private institutions in all three academic years. Instructional expenditures increased in constant dollar terms during this ten year period in both public and private higher education institutions. However, all of this growth occurred in the 1980s. Between 1975-76 and 1980-81, average instructional expenditures per FTE student actually declined slightly in constant dollars. The next five years witnessed growth in these expenditures of 17 and 18 percent in the public and private sectors, respectively. Library expenditures per FTE also dropped in the late 1970s and increased in the first half of the 1980s.

Instructional Expenditures

Instructional expenditures primarily consist of salaries paid to faculty. Increases in these salaries were often noted in the Congressional hearings on higher education costs as a factor behind tuition increases. Faculty salaries have been increasing in the 1980s in constant dollar terms. These increases, however, followed a long period of real salary declines. As Exhibit V-2 indicates, the average faculty salary in all ranks and in both sectors dropped in the late 1970s and into the early 1980s, but began climbing in 1982. In just four years between 1981-82 and 1985-86, faculty salaries grew between 8 and 11 percent in constant dollar terms.

EXHIBIT V-1

Trends in Academic Expenditure Components

	Expenditures per FTE Student in 1985-86 Dollars			Percent Change	
	1975-76	1980-81	1985-86	1975-76 to 1980-81	1980-81 to 1985-86
PUBLIC:					
Libraries	$248	$225	$253	-9%	12%
Instruction	2,860	2,809	3,282	-2%	17%
PRIVATE:					
Libraries	$400	$331	$381	-17%	15%
Instruction	3,584	3,396	4,021	-5%	18%

HEGIS analysis by Pelavin Associates.

EXHIBIT V-2

Average Salary of Full-time Instructional Faculty in Public and Private Institutions 1975-76 to 1985-86*

1985-86 Constant Dollars

	Public Institutions			Private Institutions		
	Full Professor	Associate Professor	Assistant Professor	Full Professor	Associate Professor	Assistant Professor
1975-76	$45,021	$34,328	$28,145	$43,020	$31,230	$25,732
1976-77	44,671	34,036	27,867	42,928	31,134	25,631
1977-78	44,294	33,853	27,724	42,289	30,790	25,260
1978-79	42,555	32,664	26,734	40,871	29,735	24,330
1979-80	40,349	30,985	25,211	38,499	28,006	22,852
1980-81	39,045	29,867	24,413	37,684	27,431	22,322
1981-82	38,948	29,875	24,480	38,371	27,782	22,519
1982-83	39,222	30,313	24,983	39,575	28,684	23,338
1984-85	40,667	31,236	25,885	41,448	29,803	24,352
1985-86	42,328	32,367	26,951	42,118	30,400	24,891

SOURCE: 1988 Education Indicators, page 313.

*Data for 1983-84 not available.

Increasing faculty salaries in the 1980s have been occurring alongside rapidly increasing benefits. As the data in Exhibit V-3 indicate, between 1975-76 and 1987-88, real benefits have grown from an average value of $5,358 to $8,146 per faculty member, a 52 percent increase. Whereas benefits were valued at approximately 15 percent of salary in 1975-76, they grew to 18 percent by 1980-81, and 22 percent by 1985-86 (Academe, Summer, 1976; Academe, August, 1981; Academe, March-April, 1986). Faculty benefits have therefore become a fast growing expense for higher education institutions in this ten-year period.

One factor to consider in evaluating faculty salaries is how salaries in other professional fields fared between 1975-76 and 1985-86. During this period faculty salaries rose slower than salaries of accountants, engineers and attorneys. These salaries increased by 103, 109, and 114 percent in current dollars, respectively, while faculty salaries increased approximately 87 percent during this time period. (National Center for Education Statistics, 1988; p. 317).

A further consideration is the actual work that faculties do. Academic work is comprised of a number of different tasks, although the teaching of students is central. Preliminary analyses indicate a slight decline between 1975 and 1984 in the average number of faculty hours spent teaching each week. (See Exhibit V-4.) Whereas 47 percent of all faculty taught 11 or more hours a week in 1975-76, 44 percent were in the classroom for this amount in 1984-85.

Another consideration is money earned by faculty from outside sources. Many faculty have numerous opportunities to supplement their base academic incomes with additional income from both their institutions and outside consulting. Indeed, in 1987, the average basic academic salary accounted for only 81 percent of total income for full-time faculty (National Center for Educational Statistics, 1990). The central issue is whether the amount of outside income has increased in the time period being considered in this report.

EXHIBIT V-3

Average Fringe Benefits of Faculty

	Average Benefits in Current Dollars	Average Benefits in Constant 1987-88 Dollars	Benefits as % of Salary
1975-76	$2,565	$5,358	14.7%
1980-81	4,300	5,750	18.2%
1985-86	7,273	7,743	22.0%
1987-88	8,146	8,146	22.0%

SOURCE: Academe, Summer, 1976, p. 208;
Academe, August, 1981, p. 230;
Academe, March-April, 1986, p. 13.
Academe, March-April, 1988, p. 16.

EXHIBIT V-4

Faculty Teaching Time

Hours Per Week

	None	1 to 4	5 to 10	11 to 20	Over 20
1975*	6.0%	11.0%	35.0%	42.0%	5.0%
1984**	4.7%	13.0%	38.8%	39.0%	4.6%

* Everett Carl Ladd, Jr. and Seymour Martin Lipset, "How Professors Spend Their Time." Chronicle of Higher Education, 1975, 11:2.

** Analysis of 1984 Carnegie Faculty Survey by Pelavin Associates, Inc.

All of these issues are central to an understanding of faculty salary increases in the 1980s relative to their decline throughout the 1970s. While an in-depth analysis of these issues is beyond the scope of this report, they will be treated more extensively in the final report.

What is of concern in this report is the extent to which increases in faculty salaries may have contributed to the overall increase in instructional expenditures, and whether these expenditures contributed to tuition increases. Between 1980-81 and 1985-86, real instructional expenditures increased 17 percent in the public sector and 18 percent in the private sector. (See Exhibit V-1.) However, the increase in faculty salaries in the public sector ranged only from eight to ten percent. In the private sector, increases were slightly higher, between 11 and 12 percent. Thus, instructional expenditures increased significantly faster than faculty salaries during this five year period, suggesting that increases in faculty salaries alone may not account for all of the growth in instructional expenditures.

Fringe benefits, on the other hand, have been increasing faster than instructional expenditures. Between 1980-81 and 1985-86, fringe benefits increased approximately 35 percent. Data also indicate that college faculties have become more senior since 1975-76, as Exhibit V-5 demonstrates. The proportion of full professors has grown since 1975, from 28 percent to 35 percent, while the proportion of assistant professors has decreased, from 33 percent to 25 percent. Thus, not only have faculty salaries and especially benefits increased considerably in the 1980s, but the number of faculty receiving the highest salaries and benefits has also grown.

College faculties have also grown in number since 1975-76. In both the public and private sectors, the total number of full-time faculty increased by approximately 15 percent between 1975-76 and 1985-86. However, the total number of undergraduate and graduate FTE students also increased. The result of this concomitant growth was little or no change in the

EXHIBIT V-5

Rank Distribution of Faculty: 1975-76, 1980-81, 1987-88

	Full Professors	Associate Professors	Assistant Professors	Instructors, Lecturers
1975-76	28.4%	27.8%	32.5%	11.4%
1980-81	31.7%	29.1%	28.7%	10.4%
1987-88	35.0%	27.7%	25.2%	12.2%

SOURCE: Academe, Summer, 1976, p. 208;
Academe, August, 1981, p. 230;
Academe, March-April, 1988, p. 16.

student/full-time faculty ratio. (See Exhibit V-6.) This suggests that institutions have not increased their faculty relative to the size of their student bodies.

Colleges and universities do employ more part-time faculty than they did in the 1970s. Whereas 22 percent of all senior instructional faculty were part-time in 1970, over a third (36 percent) of all such faculty were part-time by 1986 (National Center for Education Statistics, 1988, p. 177). A recent study found that the average salary for part-time faculty in 1988 was approximately $7,000, less than a fifth the salary for full-time faculty (National Center for Education Statistics, 1990). Also, part-time faculty are probably less likely to receive benefits than full-time faculty. Before drawing conclusions about the impact of part-time faculty on institutional costs, the courseloads, student contact, and other activities of part-time faculty, relative to full-time faculty, need to be carefully assessed.

Faculty issues are extremely important for understanding college costs. Colleges and universities are "labor intensive" industries in which changes in faculty compensation, teaching loads, and other characteristics discussed in this chapter may profoundly affect expenditures.

Administrative Expenditures

Administrative expenses rose even faster than instructional expenditures. In fact they grew more than any other single expenditure category between 1975-76 and 1985-86. Thus, it is not surprising that growth in administrative expenditures is another factor commonly linked to increased tuitions.

Administrative expenditures consist of:

- Academic support, which covers academic computing and other expenditures which support instruction, research, or public service;
- Student services, which includes expenses for career guidance, counseling, financial aid administration, student health and other similar services; and

EXHIBIT V-6

Enrollment & Full-Time Faculty by Sector

	1975-76	1980-81	1985-86
Public			
FTE Enrollment	8,834,508	9,457,394	9,479,273
Full-time Faculty	443,000	495,000	499,000
Student/Faculty Ratio	19.94	19.11	19.00
Private			
FTE Enrollment	2,350,351	2,639,501	2,767,782
Full-time Faculty	185,000	191,000	211,000
Student/Faculty/Ratio	12.70	13.82	13.12

SOURCES:

FTE Enrollment Data: Digest of Education Statistics 1988, pp. 153-4.
FT Faculty Data: Digest of Education Statistics 1988, p. 177.

- Institutional support, which covers general administrative services, executive direction and planning, legal and fiscal operations, and community relations.

HEGIS data reveal that institutional support expenditures are the largest component of total administrative expenditures at colleges and universities. (See Exhibit V-7.) Institutional support comprises close to half of all administrative expenses in both the public and private sectors. However, academic support expenditures were the fastest growing administrative expense between 1975-76 and 1985-86, increasing 59 percent at public institutions and 58 percent at private institutions.

Unfortunately, data on college and university administrators are not as abundant as data on faculty. HEGIS, for example, does not gather yearly data on the numbers and types of administrators, their salaries, or their functions. Information on administrators must therefore be gleaned from other studies and publications.

A recent Department of Education report on administrative costs highlighted the rapid growth of non-teaching professionals as a proportion of professional higher education personnel. Between 1966 and 1983, the percentage of non-teaching professionals grew from 17.5 percent to 23.2 percent of all full-time staff (Snyder and Galambos, 1988).

Data from the U.S. Equal Employment Opportunity Commission (EEOC) show that the two fastest growing categories of full-time college and university staff between 1975 and 1985 were both primarily administrative categories. Exhibit V-8 compares the numbers and growth rates of different types of college and university personnel during this decade. The "other professionals" category grew the fastest -- over 60 percent, or 100,00 people, between 1975 and 1985. This category includes employees in academic support, student service, and institutional support positions that require a college degree or equivalent experience. Examples are

EXHIBIT V-7

Components of Administrative Expenditures

	Expenditures per FTE Student in Constant 1985-86 Dollars			Percent Change	
	1975-76	1980-81	1985-86	1975-76 to 1980-81	1980-81 to 1985-86
PUBLIC:					
Academic Support	$283	$348	$451	23%	30%
Student Services	335	369	438	10%	19%
Institutional Support	711	674	850	-5%	26%
PRIVATE:					
Academic Support	$308	$387	$486	26%	26%
Student Services	510	553	721	8%	30%
Institutional Support	1,253	1,275	1,619	2%	27%

EXHIBIT V-8

Staff Changes at Colleges and Universities, 1975-1985

	1975	1985	Percent Change
Other professionals	**166,487**	**268,225**	**+61.1%**
Executive, administrative, and managerial employees	**102,465**	**120,585**	**+17.9%**
Technical, paraprofessional staff	113,248	129,913	+14.7%
Skilled crafts people	51,370	58,019	+12.9%
Secretarial, clerical employees	302,216	330,196	+ 9.2%
Full-time faculty members	446,830	473,537	+ 5.9%
Service, maintenance personnel	205,790	196,612	- 4.9%
Total	1,388,406	1,577,087	+13.6%

Full-time employees at approximately 3,000 U.S. colleges and universities.

SOURCE: U.S. Equal Employment Opportunity Commission.

accountants, coaches, counselors, lawyers, librarians, and systems analysts. Executive, administrative, and managerial employees comprised the next fastest growing category of highereducation institutions' staffs. This category, which includes institutions' presidents, vice presidents, deans, directors and other managers, grew by nearly 28,000 people, or 17.9 percent, between 1975 and 1985.

Much has also been written about a so-called "management revolution" in higher education. Increased and improved management on college and university campuses has been credited with both improving the financial situation of institutions (Cheit, 1973) and warding off predicted enrollment declines and its effects (Keller, 1983). These measures have required higher education institutions to commit both capital and human resources to improved administration.

In the early 1970s, several studies documented that colleges and universities needed more sophisticated planning and management approaches to avert financial stress and the threat of closure. Cheit identified "the new financial depression" in higher education (Cheit, 1971), and the Carnegie Commission on Higher Education's final report (1973) warned that higher education in the United States was headed for serious financial trouble. The published findings of the University of California's Ford Foundation project on university management also helped direct the higher education community's attention to modern planning and management strategies (Balderston, 1974).

During the late 1970s, many institutions heeded these calls and implemented management strategies as part of an increased emphasis on professionalization in higher education administration (Baldridge and Tierney, 1979; St. John, 1981). By the early 1980s, institutions were also increasingly providing a range of enrollment management functions, including student marketing, financial aid administration, student retention, academic and career advising, and student services (Hossler, 1984, 1987).

These developments are at times credited with improving the financial conditions of many colleges, especially in the private sector. One recent study credited a "renaissance" in someprivate colleges to a new, more aggressive marketing approach. "Many presidents of small private colleges report that their institutions are enjoying a renaissance, thanks to aggressive marketing tactics, more long-term planning, and innovative educational programs designed to appeal to non-traditional students" (Mooney, 1989, p. 13).

In addition to changes in academic management, growth in academic computing also appears to have contributed to the overall growth in administrative expenditures. The growing concern about computing costs is also evident from a recent survey of state higher education executive officers, over 80 percent of whom considered computing costs to be of high or moderately high concern (Brinkman, 1988). In fact, computing and scientific equipment ranked higher than any other cost on the survey.

Many colleges and universities also attribute the rapid growth in administrative expenditures to the costs of compliance with Federal laws and regulations. During the past two decades, both the number of laws affecting higher education institutions and the activities they regulate have increased. Such laws include, for example, the Equal Opportunity Employment Act of 1972, Title IX provisions to ensure equal access to collegiate sports for women, and hazardous waste disposal regulations. Higher education officials assert that these new responsibilities and accountability requirements prompted institutions to hire additional non-teaching professionals (such as coaches, auditors, and computer programmers) to comply with Federal regulations, thus pushing administrative expenditures higher (Grassmuck, 1990a, 1990b).

Plant Operation Expenditures

Plant operation and maintenance was also raised as an issue in the hearings before the House Subcommittee on Postsecondary Education (1988), not because expenditures had increased excessively, but because these expenditures had allegedly not been adequate. In a report to the Subcommittee, Paul Halpern observed: "Among the most serious -- and least recognized -- of the problems currently facing institutions of higher education is the condition of their physical plants" (1988, p. 129).

The Association of Physical Plant Administrators of Universities and Colleges (APPA) and the National Association of College and University Business Officers (NACUBO) recently published a report on the physical plant needs of higher educational institutions. Entitled The Decaying American Campus: A Ticking Time Bomb, this report presented the results of a survey of 700 institutions. Some of the key findings include:

- One-third of higher education's physical plant is now 30 or more years old; almost two-thirds is 20 or more years of age (APPA and NACUBO, 1989, p. 14).
- The capital renewal/replacement needs of U.S. colleges and universities are currently estimated at $60 billion and possible [sic] more (APPA and NACUBO, 1989, p. 25).
- Priority repairs and renovations, or "urgent needs" at colleges and universities require an estimated $20.5 billion investment through 1988 (APPA and NACUBO, 1989, p. 29).
- U.S. colleges and universities deferred $4.00 of needed maintenance for every $1.00 spent in 1988 (APPA and NACUBO, 1989, p. 29).

HEGIS data indicate increases in expenditures for the operation and maintenance of the physical plant. In the public sector, expenditures per FTE increased from $649 to $776 between 1975 and 1985, a 20 percent increase. The private sector also increased its expenditures on physical plant operations, from $926 to $1,067, or 15 percent. However, if the physical plant

requires as much renovation and maintenance as some suggest, these expenditures may need to increase in the next decade.

Student Financial Aid

Many observers of the American higher educational system have posited relationships between student financial aid and institutional tuitions. Some have suggested that institutions raise their tuitions to maximize Federal student aid. This seems unlikely, however, given that the major Federal student aid programs have maximum aid amounts well below the tuitions of many institutions, particularly private institutions. In addition, yearly increases in the maximum aid awards in these aid programs have fallen far short of tuition increases during the 1980s. In 1980-81, for example, the maximum Pell Grant award was $1,750. By 1986-87, the maximum award had increased 20 percent, to $2,100. During this same time period, the average public tuition increased 75 percent and the average private tuition increased 81 percent.

Others have argued that institutions have been forced to increase institutional financial aid to compensate for real declines in Federal aid (Green, 1987; Thrift, 1987). In fact, institutional aid has grown and Federal aid has declined during the 1980s. Between 1980-81 and 1987-88, real Federal aid decreased by 3 percent, while real institutional aid grew by 66 percent. It should also be noted that institutional aid is almost always grant aid. However, Federal aid still comprises three-fourths of all student aid.

Still others have suggested that colleges and universities have increased their allocations to institutional student financial aid in order to soften the impact of tuition increases on low- and middle-income students. This is sometimes viewed as part of a new pattern of institutional pricing that emphasizes simultaneous consideration of prices, student aid subsidies, and institutional quality improvement (Breneman, 1988; Evangelauf, 1988; Jenny, 1983). Thrift has estimated that approximately two-thirds of all institutional aid is directly awarded to students showing financial

need. She also reports that institutional aid for needy students more than doubled between 1978-79 and 1985-86.

A number of recent reports and papers examine of institutional and The Escalating Costs of Higher Education reviews findings from many of these studies.

CHAPTER VI

THE "PUBLIC IVYS" AND THE 100 MOST EXPENSIVE INSTITUTIONS

In both the public and private sectors, groups of "high-profile" institutions stand out as those most often mentioned in discussions of college costs. In the private sector, these are the 100 most expensive institutions. Among public institutions, a group of prominent institutions commonly referred to as the "public ivys" are frequently singled out as educational bargains that offer an education comparable to that of a prestigious private institution at a considerably lower price. In several respects, the public ivys and 100 most expensive institutions more closely resemble each other than they do the average institution in their respective sectors.

Enrollment and application data indicate that neither of these groups of institutions is suffering from a loss of students. Demand persists despite their high tuitions. At the nation's 100 most expensive institutions tuition is over $11,000 (62 percent higher than the average private tuition and 37 percent of median family income in 1987-88). Even tuition at the public ivys, though a fraction of the cost of the 100 most expensive schools at $5,810 for out-of-state tuition (19 percent of median family income), is higher than that at other public institutions.

Budget size also distinguishes the public ivys and 100 most expensive institutions from other institutions in their respective sectors. The selected institutions generate and spend more than twice as much money as the average institution in their respective sectors. Another distinction between these institutions and others is their research intensity. After academic expenditures, research expenditures are the second largest expenditure at these schools. Both the public ivys and the 100 most expensive institutions spent approximately four times the amount of funds per FTE student on research as other schools within their respective sectors.

Background

The most expensive private institutions and "public ivys" are both prominent in discussions of college costs, particularly in media coverage of this issue. The group of selected private schools contains the 100 schools in the United States charging the highest tuitions in 1987-88; all are private institutions. Exhibit VI-1 names the institutions in this group.

As the most expensive institutions, these colleges and universities are often seen as industry leaders. Tuitions at these expensive institutions are also publicized through national media coverage, which in turn informs public opinion about higher education costs. Tuition at the most expensive institutions also tests students' willingness to pay high tuitions.

EXHIBIT VI-1

100 Most Expensive Institutions

ALFRED UNIVERSITY
AMHERST COLLEGE
BABSON COLLEGE
BARD COLLEGE
BARNARD COLLEGE
BATES COLLEGE
BENNINGTON COLLEGE
BOSTON UNIVERSITY
BOSTON COLLEGE
BOWDOIN COLLEGE
BRANDEIS UNIVERSITY
BROWN UNIVERSITY
BRYN MAWR COLLEGE
BUCKNELL UNIVERSITY
CALIFORNIA INSTITUTE OF TECHNOLOGY
CARLETON COLLEGE
CARNEGIE-MELLON UNIVERSITY
CASE WESTERN RESERVE UNIVERSITY
CHAPMAN COLLEGE
CLAREMONT MCKENNA COLLEGE
CLARK UNIVERSITY
CLARKSON UNIVERSITY
COLBY COLLEGE
COLGATE UNIVERSITY
COLLEGE OF WOOSTER
COLLEGE OF THE HOLY CROSS
COLUMBIA UNIVERSITY MAIN DIVISION
CONNECTICUT COLLEGE
CORNELL COLLEGE
CORNELL UNIVERSITY ENDOWED COLLEGES
DARTMOUTH COLLEGE
DENISON UNIVERSITY
DREW UNIVERSITY
DUKE UNIVERSITY
EARLHAM COLLEGE
EMORY UNIVERSITY
FRANKLIN AND MARSHALL COLLEGE
GEORGETOWN UNIVERSITY
GETTYSBURG COLLEGE
GRINNELL COLLEGE
HAMILTON COLLEGE
HAMPSHIRE COLLEGE
HARVARD UNIVERSITY
HARVEY MUDD COLLEGE
HAVERFORD COLLEGE
HOBART-WILLIAM SMITH COLLEGES
JOHNS HOPKINS UNIVERSITY
KENYON COLLEGE
LAFAYETTE COLLEGE
LAKE FOREST COLLEGE
LAWRENCE UNIVERSITY
LEHIGH UNIVERSITY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
MENLO COLLEGE
MIDDLEBURY COLLEGE
MOUNT HOLYOKE COLLEGE
MUHLENBERG COLLEGE
NEW YORK UNIVERSITY
NORTHWESTERN UNIVERSITY
OBERLIN COLLEGE
OCCIDENTAL COLLEGE
PEPPERDINE UNIVERSITY
PINE MANOR COLLEGE
PITZER COLLEGE
POLYTECHNIC UNIVERSITY
POMONA COLLEGE
PRINCETON UNIVERSITY
REED COLLEGE
RENSSELAER POLYTECHNIC INSTITUTE
RHODE ISLAND SCHOOL OF DESIGN
ROLLINS COLLEGE
SAINT LAWRENCE UNIVERSITY
SARAH LAWRENCE COLLEGE
SIMON'S ROCK OF BARD COLLEGE
SKIDMORE COLLEGE
ST. JOHN'S COLLEGE-MAIN CAMPUS
STANFORD UNIVERSITY
STEVENS INSTITUTE OF TECHNOLOGY
SWARTHMORE COLLEGE
TRINITY COLLEGE
TUFTS UNIVERSITY
TULANE UNIVERSITY OF LOUISIANA
UNION COLLEGE
UNIVERSITY OF THE SOUTH
UNIVERSITY OF PENNSYLVANIA
UNIVERSITY OF THE PACIFIC
UNIVERSITY OF RED NDS
UNIVERSITY OF CHICAGO
UNIVERSITY OF ROCHESTER
VANDERBILT UNIVERSITY
VASSAR COLLEGE
WASHINGTON UNIVERSITY
WELLESLEY COLLEGE
WELLS COLLEGE
WESLEYAN UNIVERSITY
WILLIAMS COLLEGE
WITTENBERG UNIVERSITY
WESTMINSTER COLLEGE
WORCESTER POLY TECHNIC INSTITUTE
YALE UNIVERSITY

Unlike the 100 most expensive institutions, the public institutions profiled in this chapter were selected on the basis of reputation, not price. What distinguishes the "Public Ivys" from other state-supported institutions is their reputation for offering an education comparable to that of elite private schools at public tuition levels. Richard Moll coined the term in his 1985 book entitled The Public Ivys: A Guide to America's Best Public Undergraduate Colleges and Universities.

In his guide, seven individual state institutions and one state system received top rankings.[1]

We identified our own "public ivys" as the eight public institutions ranked among the top 25 National Universities in the 1988 edition of America's Best Colleges, published by U.S. News and World Report. The top "National Universities" were based on survey responses of university presidents. The survey asked presidents of major research universities to identify from a list of research universities ten colleges that provide the "best" undergraduate education. The institutions most commonly named in the top ten were included in the U.S. News and World Report "best" list. Exhibit VI-2 lists the public institutions named in the "National Universities" category, which are referred to in this report as the "public ivys." We have chosen this group of institutions, which overlaps considerably with Moll's list, because the schools were selected using more recent information. We recognize that this is only one of many rankings of higher education institutions, and that there are methodological problems inherent in using such a list; yet student behavior is affected by the publicity these rankings receive.

The main focus of our current analysis is to present the similarities and differences between these selected groups of schools and all schools in the public and private sectors. Using

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[1]The institutions included by Moll were: the entire University of California system; Miami University at Oxford; University of Vermont at Burlington; University of Michigan at Ann Arbor; University of North Carolina at Chapel Hill; University of Texas at Austin; University of Virginia at Charlottesville; and the College of William and Mary.

EXHIBIT VI-2

The Public Ivys

University of California, Berkeley

University of Michigan, Ann Arbor

University of North Carolina, Chapel Hill

University of Virginia, Charlottesville

College of William and Mary, Williamsburg

University of Illinois, Champaign-Urbana

University of Wisconsin, Madison

University of Texas, Austin

SOURCE: America's Best Colleges, U.S. News and World Report, 1988 edition.

data on enrollment, admissions, and expenditure and revenue composition, this chapter profiles the public ivys and 100 most expensive institutions to determine what differentiates them from other higher educational institutions.

Enrollments

With tuitions rising, lower-priced public institutions have become increasingly attractive to many families. Therefore, one would expect increasing applications to these schools, and perhaps enrollment expansion as well, though enrollment growth is generally limited, at least in the short run, by capacity. Likewise, if high prices act as a deterrent to students, the 100 most expensive institutions could be expected to have experienced application and enrollment declines. In fact, enrollments rose somewhat in both types of institutions. Although enrollment growth rates do not necessarily imply growing demand, they do seem to rule out the possibility of greatly decreased demand.

Discussions of tuition at public institutions usually center around in-state tuition charges, since state institutions are attended predominantly by students who are residents of that state. However, public colleges, particularly four-year institutions, do enroll students who do not live within the state; these enrollments vary in number by state and institution. Because the "public ivys" compete not only with other public institutions within their state but also with other institutions outside their state, we are interested in determining how their tuitions, particularly out-of-state tuitions, compare with other types of institutions. We also examine whether applications to these schools have increased.

Exhibit VI-3 compares both in-state and out-of-state tuition trends for these eight public ivys and all public four-year institutions, as well as tuition for private four-year schools and the 100 most expensive private institutions. Because in-state and out-of-state enrollments are not

EXHIBIT VI-3

Selected Tuition Trends
(Unweighted)

	Public In-state		Public Out-of-State		Private	
Academic Year	Public Ivys	All Public 4-Year	Public Ivys	All Public 4-Year	All Private 4-Year	100 Most Expensive
1975-76	$622	$541	$1,981	$1,376	$1,992	$3,382
1980-81	938	774	2,807	1,943	3,066	5,397
1984-85	1,496	1,175	4,427	2,949	4,633	8,736
1987-88	1,904	1,425	5,810	3,542	6,032	11,435
% Increase: 1975-87	206%	163%	193%	157%	203%	238%

Analysis by Pelavin Associates, Inc.

reported separately in either HEGIS or IPEDS, and because we are interested in comparing out-of-state tuitions for the public ivys with other types of schools, these tuition data are not weighted. They thus represent the average tuition charged by the institutions in that particular category and not the average tuition paid by students attending that type of school. These data provide an overview of the differences in cost of attending a public ivy and other types of institutions.

For the student residing in one of the seven states in which the public ivys are located,[2] tuitions are considerably lower than those of private institutions nationwide. Whereas the average in-state tuition for the public ivys was $1,904 in 1987-88, the average tuition for private four-year schools for that same year was $6,032, or more than three times greater.

Another important contrast exists between the average out-of-state tuitions for the public ivys and the average tuitions for the 100 most expensive private schools with whom they are often compared in terms of reputation. If students perceive the public ivys to be comparable to some of the pricier private institutions, then the financial savings of attending one of the public ivys is striking.

We contacted each of these eight schools by telephone and received comparable application and enrollment data from all institutions. Exhibit VI-4 examines changes in the number and composition of applicants from the fall of 1975 to the fall of 1987.

The number of both in-state and out-of-state applications to seven of the eight schools increased during this interval. (At the University of Illinois at Urbana-Champaign, out-of state applications increased, but in-state applications declined.) The numbers of out-of-state applications rose at higher rates than did numbers of in-state applications to all institutions. The

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[2]Two of the public ivys, William and Mary and the University of Virginia, are both located in Virginia. Thus, there are eight public ivys, but only seven states.

EXHIBIT VI-4

Applicant Composition in the Public Ivys
1975-76, 1980-81, 1987-88

Institution	1975-76 In State	1975-76 Out of State	1980-81 In State	1980-81 Out of State	1987-88 In State	1987-88 Out of State
University of Illinois, Champaign-Urbana	15,848 (90%)	1,694 (10%)	14,567 (92%)	1,237 (8%)	14,353 (86%)	2,282 (14%)
University of Michigan, Ann Arbor	7,130 (64%)	3,930 (36%)	6,428 (55%)	5,167 (45%)	7,786 (40%)	11,459 (60%)
University of N. Carolina, Chapel Hill	5,537 (56%)	4,347 (44%)	6,030 (53%)	5,415 (47%)	6,630 (43%)	8,660 (57%)
University of Wisconsin, Madison	6,662 (66%)	3,428 (34%)	7,637 (55%)	6,336 (45%)	6,945 (44%)	8,704 (56%)
University of Texas, Austin	8,558 (88%)	1,153 (12%)	9,920 (79%)	2,589 (21%)	11,668 (79%)	3,049 (21%)
University of Virginia, Charlottesville	3,924 (42%)	5,413 (58%)	4,382 (41%)	6,395 (59%)	5,529 (35%)	10,152 (65%)
College of William & Mary (Virginia)	2,171 (44%)	2,731 (56%)	2,278 (40%)	3,420 (60%)	3,293 (43%)	4,416 (57%)

Source: Data provided by institutions and state higher education coordinating boards.

growth of out-of-state applications was particularly dramatic at the University of Michigan and the University of Texas, where out-of-state applications rose by 192 percent and 164 percent, respectively. At the University of Michigan, out-of-state applicants increased from 36 percent of the total applicant pool in 1975 to 60 percent in 1987.

Enrollments in the public ivys also increased, but not nearly as rapidly as applications. Undergraduate enrollment at the University of Michigan, for example, grew only slightly from 21,494 in 1975 to 22,679 in 1987, or 5.5 percent, compared to a 74.0 percent growth in total applications. This trend of limited undergraduate enrollment growth pervaded all the public ivys during the 1975 to 1987 interval. The University of Wisconsin experienced the highest rate of undergraduate enrollment growth during this period at 16 percent. Total undergraduate enrollment at all the public ivys increased from 118,159 FTE students in 1975-76 to 129,562 FTE students in 1986-87, or 9.7 percent.

Comparable data for the 100 most expensive colleges and universities also show some enrollment growth. HEGIS data show that undergraduate student FTE enrollment in these institutions rose from 253,490 in 1975-76 to 281,140 in 1986-87, or 10.9 percent. Although we do not have enrollment and applicant data by institution, recently published sources indicate that there are still many more students

applying to these schools than there are spaces available, and many of these colleges can afford to be selective in their admissions policies. For example, among freshman applications submitted for the 1988-89 academic year, the acceptance rate at Syracuse University was 62 percent; at Georgetown University, 22 percent; at Swarthmore College, 34 percent; and at Bennington College, often cited in recent years as the nation's most expensive college, 61 percent (America's Best Colleges, 1990).

While these data suggest high numbers of applications to the public ivys and many of the 100 most expensive schools, one cannot conclude anything about how these rates compare to other schools. It would be surprising, however, if all public four-year institutions experienced increases in applications as dramatic as the public ivys, or if all private institutions had acceptance rates as low as the institutions with high tuitions that we mentioned above, especially since recent articles report that applications to many private institutions are down.

Enrollment and application data suggest the popularity of the 100 most expensive institutions and the public ivys. The next issue to address is to determine how these schools differ from others. One way to approach this issue is to examine their expenditure and revenue characteristics.

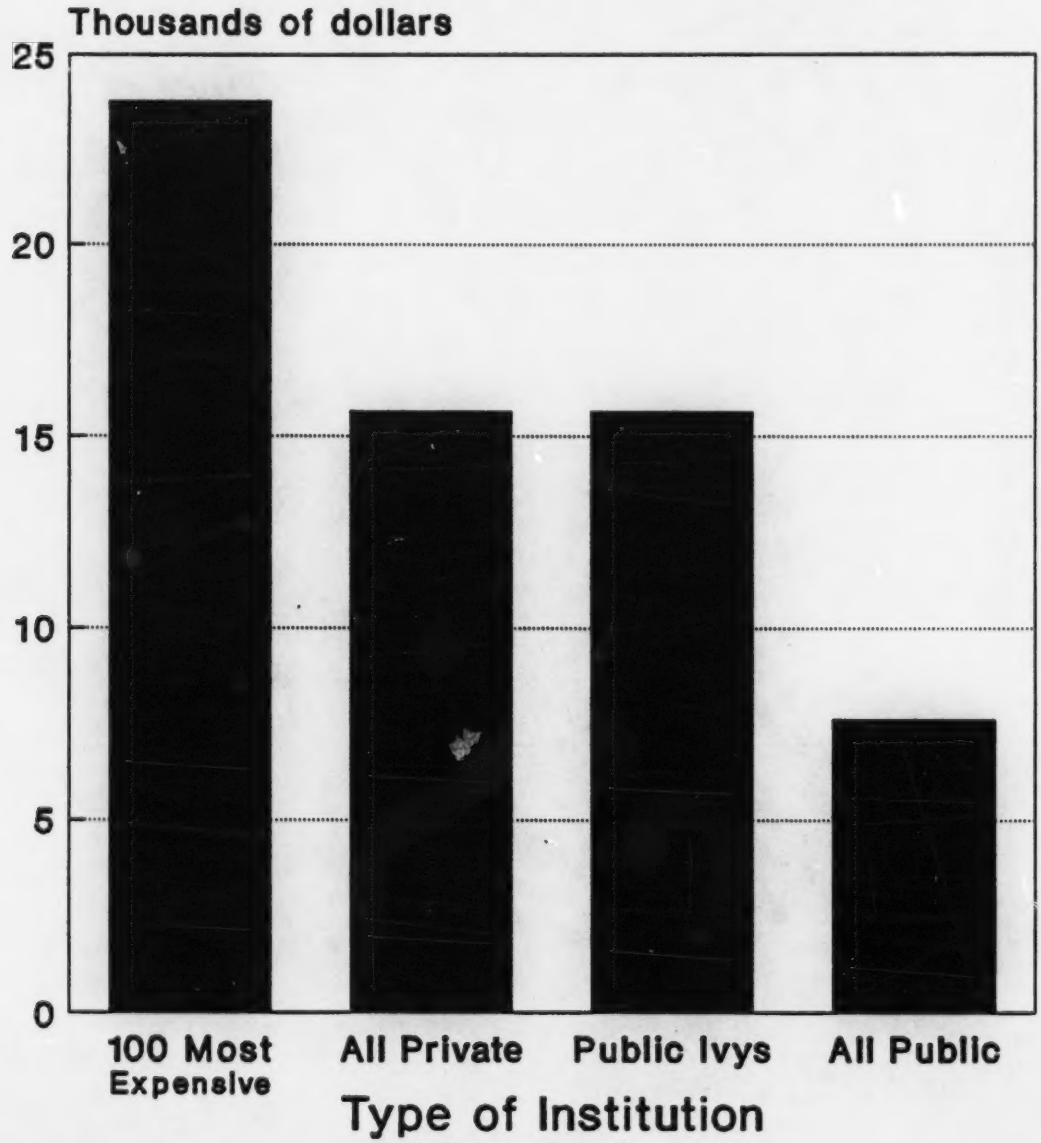
Composition of Expenditure and Revenue

The most current expenditure and revenue figures available on the public ivys and 100 most expensive institutions are from 1985-86. These data permit comparisons of the selected institutions and the average public and private institutions on the bases of size and composition of institutional budgets, as well as budgetary changes over time.

Expenditures

The most striking difference between the public ivys and 100 most expensive institutions and their respective sectors is that the selected schools spent about twice as many dollars per FTE student. In fact, the public ivys spent more per student than the average private school. Exhibit VI-5 illustrates the differences in total E&G expenditures at the public ivys, 100 most expensive institutions, all public institutions, and all private institutions in 1985-86. However, as Exhibit VI-6 shows, the composition of expenditures was not radically different between the selected institutions and others. Academic expenditures consumed the largest share of the budget, 42 percent in the public ivys and 43 percent in the 100 most expensive private institutions. While

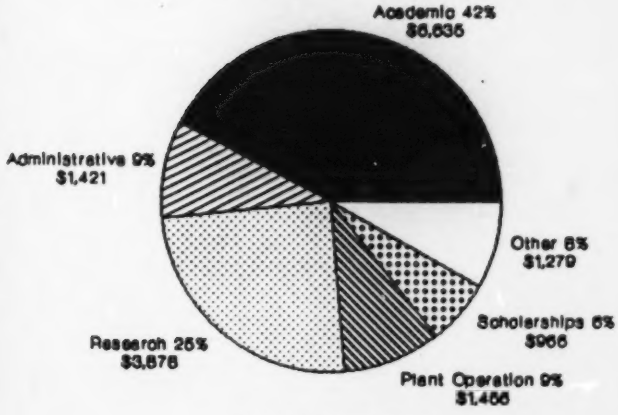
Exhibit VI-5
Total Expenditures per FTE Student in 1985-86 by Sector & Institution Type



HEGIS analysis by Pelavin Associates

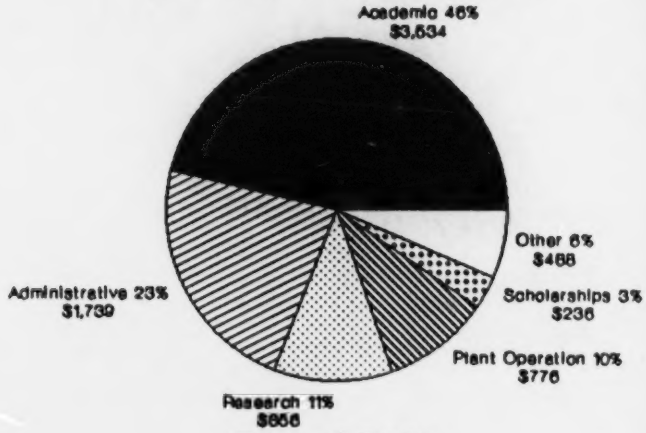
Exhibit VI-6
Comparative Expenditure Composition
1985-86, per FTE student

Public Ivys



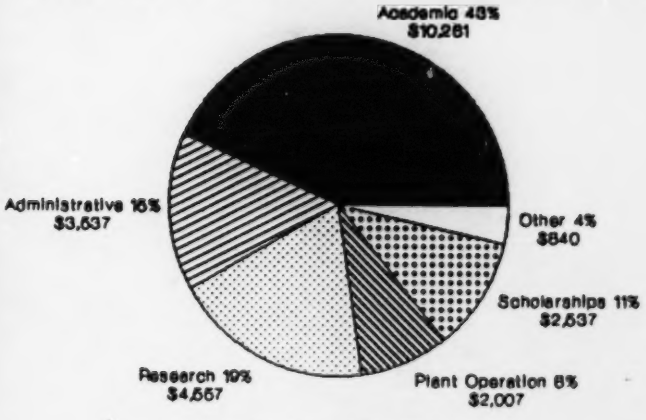
Total - $15,634

All Public Institutions



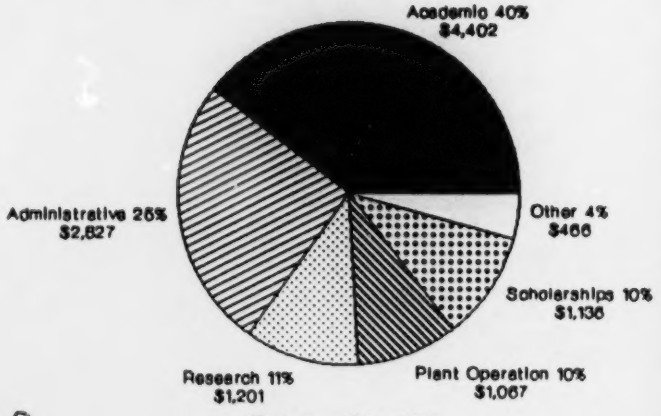
Total - $ 7,630

100 Most Expensive Institutions



Total - $23,759

All Private Institutions



Total - $11,098

administrative expenditures were the second largest budget item for the average institution in each sector, for the selected schools the second ranking expenditure category was research. The public ivys spent, on average, 25 percent of their education revenue on research, while the 100 most expensive institutions spent an average of 19 percent. This points to the major expenditure difference between the selected institutions and the average higher education institution -- the selected schools are research intensive.

Administrative expenditures comprised a much smaller proportion of the budget in the selected schools than in the private and public sectors generally. The public ivys spent only nine percent on administration, while the 100 most expensive spent 15 percent of their education revenue on administrative expenses. Most other expenditure categories represented similar budget shares (within two percentage points) in the selected institutions and other institutions in the same sector. The only exception is that the public ivys spent six percent on scholarships, twice the budget share allocated by the average public institution (three percent) to this category.

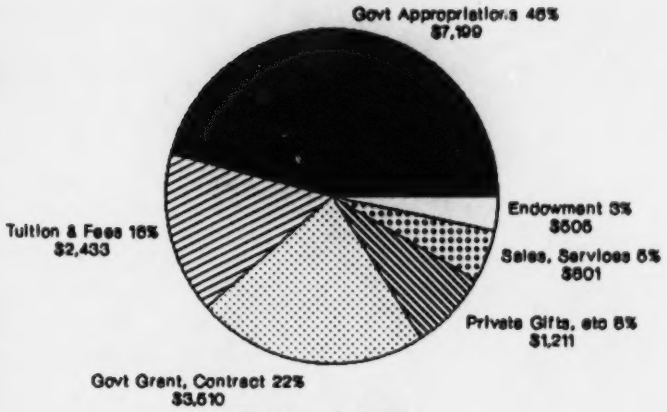
Given the difference in budget sizes, similar shares translate into higher expenditures for the selected institutions. The dollar differences are even greater where budget shares are larger among the public ivys and 100 most expensive institutions. The selected institutions spent about four times as many funds per FTE student on research as the average institution in their sector. The larger percentage of expenditures for scholarships in the public ivys, noted above, is also magnified when the total budget amount is considered; public ivys spent four times more per student on scholarship than the average public school.

Revenue

The research intensity of the public ivys and 100 most expensive institutions is reflected not only in expenditures on research but also in revenue composition. Exhibit VI-7 illustrates the

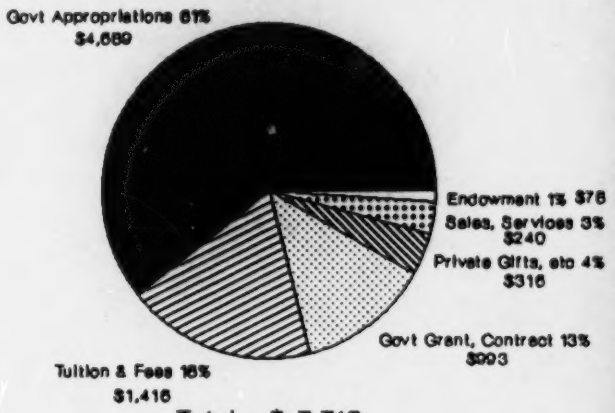
Exhibit VI-7
Comparative Revenue Composition
1985-86, per FTE student

Public Ivys



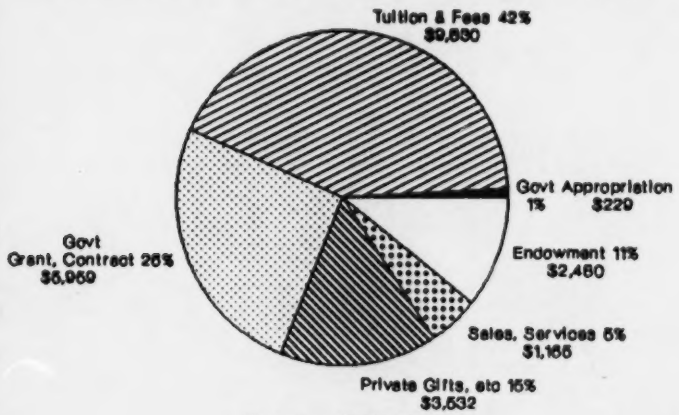
Total - $15,659

All Public Institutions



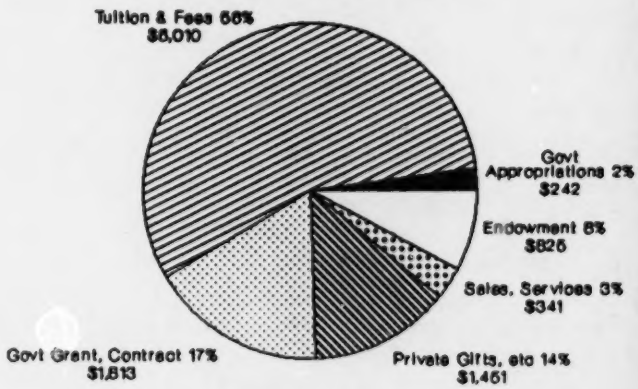
Total - $ 7,713

100 Most Expensive Institutions



Total - $23,194

All Private Institutions



Total - $10,682

revenue composition of the selected institutions and the public and private sectors generally. The selected schools received more funds from government grants and contracts than the average school, probably due to Federal research contracts.

The larger expenditure amounts in other categories at the selected schools are funded by larger total revenue amounts at these institutions. In addition to absolute dollar differences, revenues at the selected schools are also more evenly distributed among the various sources. The public ivys relied on government appropriations for only 46 percent of their total educational revenues, whereas other public schools depended on government appropriations for 61 percent of their budget. Tuition and fee revenue also contributed a smaller proportion of total revenue in the public ivys (16 percent) than in other public institutions (18 percent).

Comparisons between the 100 most expensive schools and other private schools reveal a similar pattern. Only government appropriations and tuition and fees contributed smaller proportions of total revenue to the 100 most expensive institutions than to the private sector in general. The largest revenue category for both groups was tuition and fees. The 100 most expensive schools relied on tuition and fees for only 42 percent of their total revenue, however, while at the average private school these revenues represented 56 percent of the total educational budget. Government appropriations comprised two percent of total revenue at the average private school, compared to one percent at the 100 most expensive schools. All other categories represented a larger proportion of total revenue at the 100 most expensive schools than at other private schools.

Due to the magnitude of total revenue per FTE student at the selected schools, each revenue source contributed a larger amount per student to these schools. Even tuition and fee revenues were significantly larger in actual dollar amounts at the selected institutions in both sectors, although their relative size was smaller than their respective sector average. The public

ivys received $2,433 per FTE in tuition and fee revenue, while the average public school only received $1,416 from this source. In the private sector, the 100 most expensive institutions received $9,830 per FTE from tuition and fees, while corresponding revenue at other private schools averaged $6,010.

Expenditure and Revenue Trends

The long-term trends in expenditure and revenue have not differed greatly between the selected institutions and other portions of the public and private sectors, presented in Chapter IV. In all types of institutions, there was little real growth in revenue and E & G expenditures between 1975-76 and 1980-81, followed by significant real growth in both revenue and expenditures between 1980-81 and 1985-86.

Among the selected schools, spending on academic and research functions -- the largest expenditure categories -- remained fairly constant between 1975-76 and 1980-81, and both categories grew between 1980-81 and 1985-86. However, the rate of growth in these categories was below the overall rate of growth in E & G expenditures for both types of selected schools. Administrative expenses at the public ivys remained nearly constant between 1975-76 and 1980-81, but then grew at the same rate as E & G expenditures. In contrast, at the 100 most expensive schools administrative expenditures grew faster than total E & G expenditures over both periods. Budget figures for all three years are presented in Exhibit VI-8. Comparable figures for all public and private institutions are presented in Chapter IV.

Revenue trends at the public ivys and 100 most expensive institutions (presented in Exhibit VI-9) also parallel the patterns in the public and private sectors generally. As at other institutions within their respective sectors, tuition and fee revenue per FTE in the selected institutions rose at rates similar to E & G expenditures and the CPI between 1975-76 and 1980-81, then grew considerably faster than both the CPI and E & G expenditures between 1980-81

EXHIBIT VI-8

Trends in Education and General Expenditures in the Public Ivys and 100 Most Expensive Privates: 1975-76, 1980-81, and 1985-86

	Expenditures per FTE in 1985-86 Dollars			Percent Change	
	1975-76	1980-81	1985-86	1975-76 to 1980-81	1980-81 to 1985-86
PUBLIC IVYS:					
Academic	$5,780	$5,763	$6,635	-0.3%	15.1%
Administrative	1,273	1,190	1,421	-6.5%	19.4%
Scholarships	695	615	966	-11.5%	57.1%
Plant Operation	1,226	1,271	1,456	3.7%	14.6%
Research	3,166	3,282	3,878	3.7%	18.2%
Other	1,099	971	1,279	-11.6%	31.7%
Total E & G	13,239	13,093	15,634	-1.1%	19.4%
100 MOST EXPENSIVE:					
Academic	$8,207	$8,179	$10,281	-0.3%	25.7%
Administrative	2,432	2,541	3,537	4.5%	39.2%
Scholarships	1,606	1,697	2,537	5.7%	49.5%
Plant Operation	1,604	1,729	2,007	7.8%	16.1%
Research	4,082	3,990	4,557	-2.3%	14.2%
Other	441	521	840	18.1%	61.2%
Total E & G	18,372	18,658	23,759	1.6%	27.3%

HEGIS analysis by Pelavin Associates.

EXHIBIT VI-9

Trends in General Education Revenues in the Public Ivys and 100 Most Expensive Privates: 1975-76, 1980-81, and 1985-86

	Revenue per FTE in 1985-86 Dollars			Percent Change	
	1975-76	1980-81	1985-86	1975-76 to 1980-81	1980-81 to 1985-86
PUBLIC IVYS:					
Tuition & Fees	$1,791	$1,724	$2,433	3.7%	41.1%
Government Appropriations					
Federal	194	129	124	-33.5%	-3.9%
State & Local	6,368	6,407	7,075	-0.6%	10.4%
Government Grants					
Federal	3,268	3,112	3,265	-4.7%	4.9%
State & Local	150	174	245	16.0%	40.8%
Private Gifts	701	737	1,211	5.1%	64.3%
Endowment	204	323	505	58.3%	56.3%
Sales & Services of Educational Activities	451	601	801	33.3%	33.3%
Total	13,127	13,207	15,659	0.6%	18.6%

HEGIS analysis by Pelavin Associates.

and 1985-86. However, increases in non-tuition and fee revenue did not keep pace with E & G expenditures in either the selected institutions or the public and private sectors generally in the latter period. These long-term revenue data, presented in Exhibit VI-10, support the allegation that for the selected higher educational institutions (as well as the public and private sectors generally, profiled in Chapter IV), higher education tuitions may not be driven exclusively by expenditure increases, but may be influenced by changes in other revenue sources as well.

EXHIBIT VI-10

Revenue Compared to E&G and CPI Growth

TUITION AND FEE REVENUE

		Public Ivys	100 Most Expensive
Tuition, Fees 75-76	Actual	$914	$3,458
Tuition, Fees 80-81	Adjusted to CPI growth	1,426	5,394
	Actual	1,368	5,690
	Adjusted to E&G growth	1,406	5,464
Tuition, Fees 85-86	Adjusted to CPI growth	1,724	7,169
	Actual	2,433	9,830
	Adjusted to E&G growth	2,052	9,104

NON-TUITION AND FEE REVENUE

		Public Ivys	100 Most Expensive
Non Tuition, Fees 75-76	Actual	$5,784	$5,561
Non Tuition, Fees 80-81	Adjusted to CPI growth	9,023	8,816
	Actual	9,113	8,796
	Adjusted to E&G growth	8,907	8,929
Non Tuition, Fees 85-86	Adjusted to CPI growth	11,482	11,083
	Actual	13,226	13,364
	Adjusted to E&G growth	13,670	14,074

HEGIS analysis by Pelavin Associates.

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